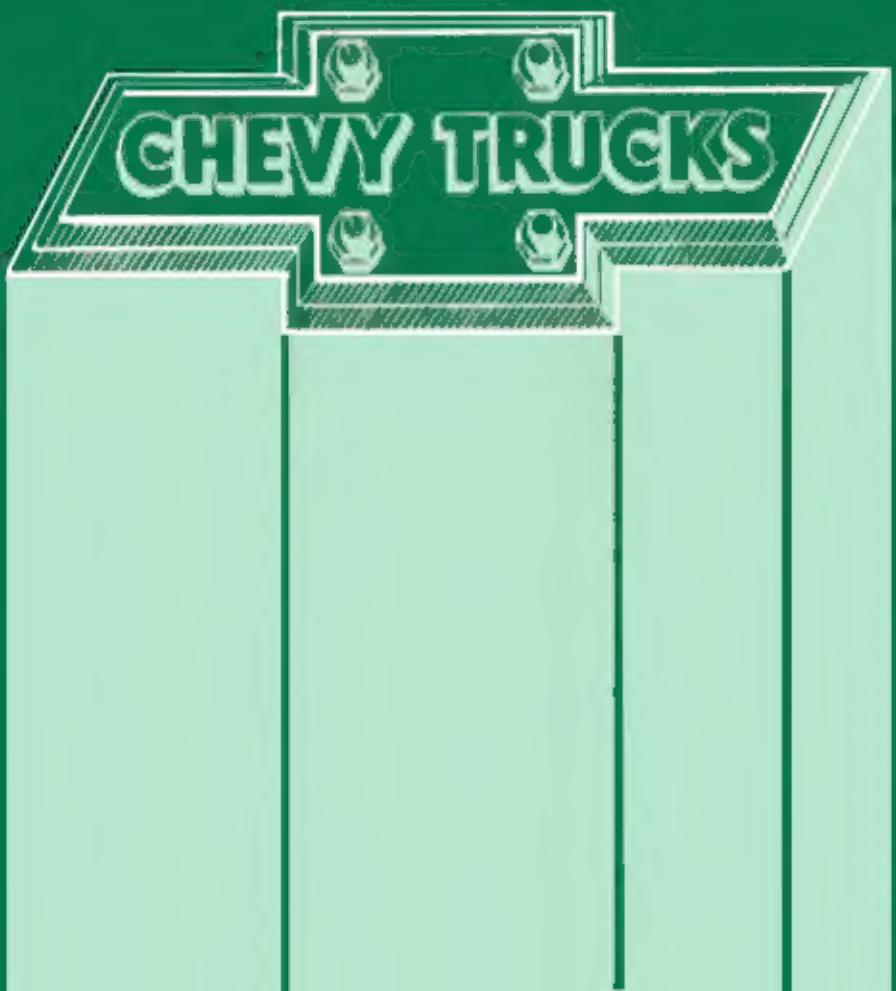
1988 Chevrolet Owners Manual

Chevy Van

Keep with vehicle at all times. Contains important operating, safety, and maintenance instructions.



1988 CHEVROLET VAN OWNER'S MANUAL

Table of Contents

This manual should be considered a permanent part of this vehicle. It should stay with the vehicle when sold, to provide the next owner with important operating, safety, and maintenance information.

All information, illustrations and specifications in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

For vehicles sold in Canada, substitute the name "General Motors of Canada Limited" wherever the name "Chevrolet Motor Division" appears in this manual.

Printed in U.S.A.

INTRODUCTION

This manual has been prepared to acquaint you with the operation and maintenance of your 1988 vehicle, and to provide important safety information. It is supplemented by a Maintenance Schedule booklet and a Warranty and Owner Assistance booklet. We urge you to read all three publications carefully. Following the recommendations will help assure the most enjoyable, safe and troublefree operation of your vehicle.

When it comes to service, keep in mind that your Chevrolet dealer knows your vehicle best and is interested in your complete satisfaction. Your dealer invites you to return for all of your service needs both during and after the warranty period.

Remember, if you have a problem that has not been handled to your satisfaction, follow the steps in the separate "Warranty and Owner Assistance" booklet.

We thank you for choosing a Chevrolet product, and want to assure you of our continuing interest in your motoring pleasure and satisfaction.

FRENCH OWNER'S MANUAL

If preferred, a French Owner's Manual can be obtained either from your dealer or by writing to Dyment Limited, 36 Overlea Blvd., Toronto, Ontario M4H 1B7.

Aux Proprietaires Canadiens:

Vous pouvez vous procurer un exemplaire de ce guide en francais chez votre concessionnaire ou au Dyment Limitee, 36 Overlea Blvd., Toronto, Ontario M4H 1B7.

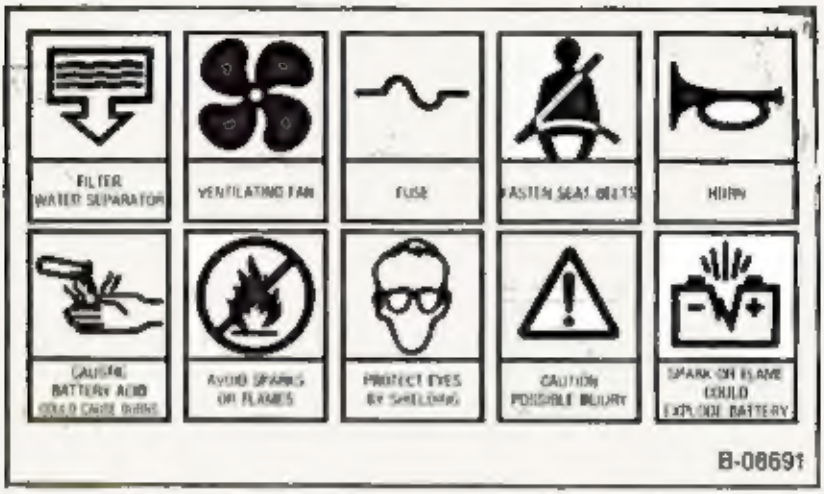
CHEVROLET MOTOR DIVISION
GENERAL MOTORS CORPORATION
30007 Van Dyke Ave.
Warren, Michigan 48090

For continuing satisfaction keep your vehicle all GM. General Motors Parts are identified by one of these trademarks.

GRAPHIC SYMBOLS

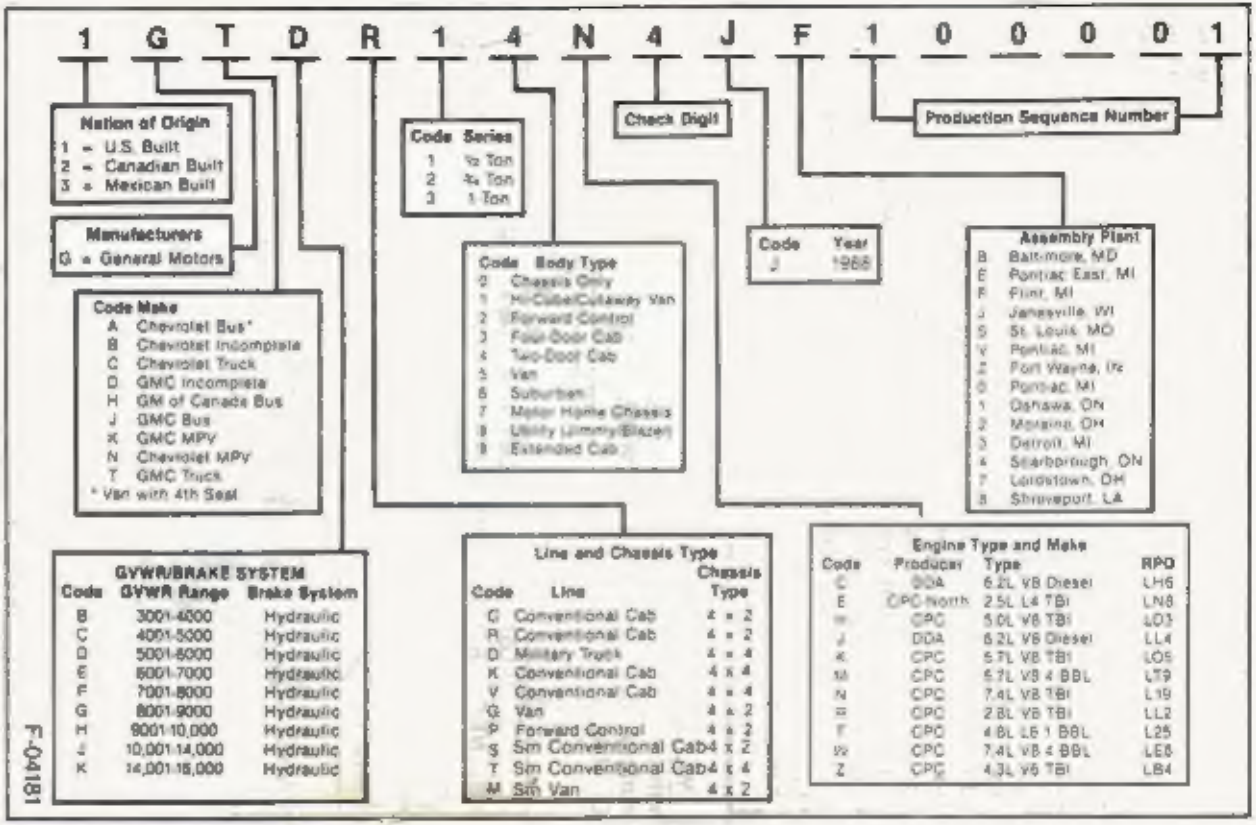
Some of the following symbols are used to identify controls and displays on your vehicle.

GRAPHIC SYMBOLS (CONT.)



VEHICLE IDENTIFICATION NUMBER (VIN)

This is the legal identifier of your vehicle. It appears on a plate attached to the left top of the instrument panel. This plate can be seen easily through the windshield from outside your vehicle. The VIN also appears on the certificates of Title and Registration. Refer to the following chart to help explain your VIN. Also, refer to Section 6 for more information on identification numbers.


1 G T D R 1 4 N 4 J F 1 0 0 0 0 1
Nation of Origin
1 = U.S. Built
2 = Canadian Built
3 = Mexican Built
Manufacturers
G = General Motors
Code Make
A Chevrolet Bus*
B Chevrolet Incomplete
C Chevrolet Truck
D GMC Incomplete
H GM of Canada Bus
J GMC Bus
K GMC MPV
N Chevrolet MPV
T GMC Truck
* Van with 4th Seat
GVWR/BRAKE SYSTEM
Code GVWR Range Brake System
B 3001-4000 Hydraulic
C 4001-5000 Hydraulic
D 5001-6000 Hydraulic
E 6001-7000 Hydraulic
F 7001-8000 Hydraulic
G 8001-9000 Hydraulic
H 9001-10,000 Hydraulic
J 10,001-14,000 Hydraulic
K 14,001-16,000 Hydraulic
Code Series
1 ½ Ton
2 ¾ Ton
3 1 Ton
Code Body Type
0 Chassis Only
1 Hi-Cube/Cutaway Van
2 Forward Control
3 Four-Door Cab
4 Two-Door Cab
5 Van
6 Suburban
7 Motor Home Chassis
8 Utility (Jimmy/Blazer)
9 Extended Cab
Line and Chassis Type
Code Line Chassis Type
C Conventional Cab 4 x 2
R Conventional Cab 4 x 2
D Military Truck 4 x 4
K Conventional Cab 4 x 4
V Conventional Cab 4 x 4
G Van 4 x 2
P Forward Control 4 x 2
S Sm Conventional Cab 4 x 2
T Sm Conventional Cab 4 x 4
M Sm Van 4 x 2
Check Digit
Code Year
J 1988
Assembly Plant
B Baltimore, MD
E Pontiac East, MI
F Flint, MI
J Janesville, WI
S St. Louis, MO
V Pontiac, MI
Z Fort Wayne, IN
0 Pontiac, MI
1 Oshawa, ON
2 Windsor, ON
3 Detroit, MI
4 Scarborough, ON
7 Lordstown, OH
8 Shreveport, LA
Production Sequence Number
Engine Type and Make
Code Producer Type RPO
C GDA 6.2L V8 Diesel LH6
E CPC-North 2.5L L4 TBI LN8
H CPC 5.0L V8 TBI LO3
J GDA 6.2L V8 Diesel LL4
K CPC 5.7L V8 TBI LO5
M CPC 5.7L V8 4 BBL LT9
N CPC 7.4L V8 TBI L19
R CPC 2.8L V6 TBI LL2
T CPC 4.8L L6 1 BBL L25
W CPC 7.4L V8 4 BBL LE8
Z CPC 4.3L V6 TBI LB4
F-04181

IMPORTANT INFORMATION ON VEHICLE LOADING

OVERLOADING

CAUTION: The components of your vehicle are designed to provide satisfactory service if the vehicle is not loaded in excess of either the Gross Vehicle Weight Rating (GVWR) or the maximum front and rear Gross Axle Weight Ratings (GAWR's). These ratings are listed on the Vehicle Certification Label located on the trailing edge of the driver's (left-hand) door or on the Incomplete Vehicle Document found in the cab.

Overloading can result in loss of vehicle control and personal injury, either by causing component failures or by affecting vehicle handling. It can also shorten the service life of your vehicle.

Your dealer can advise you of the proper loading conditions for your vehicle. Using selected heavier suspension components for added durability does not increase any of the weight ratings shown on the Vehicle Certification Label.

LOADED—MAXIMUM GVWR: 2540 kg/5600 LBS.

FRONT GAWR: 1318 kg/2906 LBS. REAR GAWR: 1318 kg/2906 LBS.

*Front curb	1017 kg/2244 LBS.	*Rear curb	797 kg/1758 LBS.
Front Cargo & Pass. Load	179 kg/ 395 LBS.	Rear Cargo & Pass. Load	161 kg/ 355 LBS.
	1196 kg/2639 LBS.		958 kg/2113 LBS.

TOTAL WEIGHT AT GROUND: 2154 kg/4752 LBS.

* Curb weight equals the weight of the vehicle without driver, passenger or cargo, but including fuel and coolant. F-03213

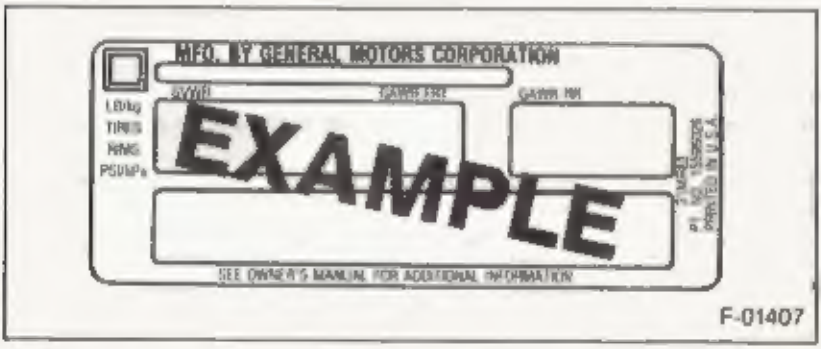
MAXIMUM FRONT AND REAR AXLE WEIGHTS

The weight of the cargo load must be properly distributed over both the front and rear axles. The Certification Label shows the maximum weight that the front axle can carry (front GAWR). It also shows the maximum weight that the rear axle can carry (rear GAWR). The GVWR is the maximum permissible loaded weight of the vehicle and takes into account the capabilities of the engine, transmission, frame, springs, brakes, axles and tires. Actual loads at the front and the rear axles can only be determined by weighing the vehicles. This can be done at highway weigh stations or other such places. See your dealer for help. The cargo load should be distributed on both sides of the centerline as equally as possible.

EFFECT ON WARRANTY

Your new vehicle warranty does not apply to any part of your vehicle which has been subject to misuse. Any part which fails because of overloading has been subjected to misuse.

CERTIFICATION LABEL



F-01407

Your Certification Label shows the GVWR, and the front and rear GAWR's for your vehicle.

Gross Vehicle Weight (GVW) is the weight of originally equipped vehicle and all items added to it after it has left the factory. This would include bodies, winches, booms, etc.; the driver and all occupants; and the load the vehicle is carrying. The GVW must not exceed the GVWR. Also, the front and rear gross axle weights must not exceed the front and rear GAWR's.

TIRES

The tires on your vehicle must be of the proper size and properly inflated for the load which you are carrying.

The Vehicle Certification Label shows the originally equipped tire size and recommended inflation pressures.

SECURE CARGO

CAUTION: To help avoid personal injury, secure all items in place. This should help keep them from being thrown about during a collision or sudden maneuver. Put luggage or cargo in the rear area if possible. Cargo weight inside the vehicle should be located as far forward as possible. With the optional rear seats removed, use the seat anchor pins in the floor anchor plates to tie cargo down. Do not pile luggage or cargo higher than the seatbacks.

SECTION 1
BEFORE DRIVING YOUR VAN

DRIVER DAILY CHECKLIST

Be sure you know how to use your vehicle and its equipment before operating it.

BEFORE ENTERING THE VEHICLE

1. See that the windows, mirrors, lights and reflectors are undamaged, clean and unobstructed.
2. Look at the tires. If any tire does not look normal, check it with a pressure gage.
3. Look for fluid leaks.
4. Be sure everything is properly stowed.
5. Check the area behind the vehicle if you are about to back up.

BEFORE DRIVING OFF

1. Lock all doors.
2. Adjust the seat.
3. Adjust the inside and outside mirrors.
4. Always properly fasten your safety belt. Check that safety belts for all other occupants are fastened properly. Never let anyone ride in the cargo area or any other place in or on this vehicle where there is no safety belt.
5. Check that all warning lights work as the key is turned to "RUN" or "START."
6. Check all gages (including the fuel gage).
7. Release the parking brake (and make sure the "BRAKE" light turns off).

Refer to related topics in this manual or the Maintenance Schedule booklet, especially if problems are found.

APPLICABLE SAFETY STANDARDS

This vehicle was originally designed, manufactured and sold by General Motors Corporation as a bus, multi-purpose vehicle (MPV) or truck. General Motors Corporation has certified that as a bus, MPV or truck this vehicle conforms to all applicable Federal Motor Vehicle Safety Standards (FMVSS).

This vehicle was not originally intended for use as a school bus, unless sold as an incomplete vehicle equipped with School Bus Application Option RPO B3D. Therefore, this vehicle need not and does not conform to those FMVSS requirements specifically intended only for school buses, except to the extent specified in option B3D when selected.

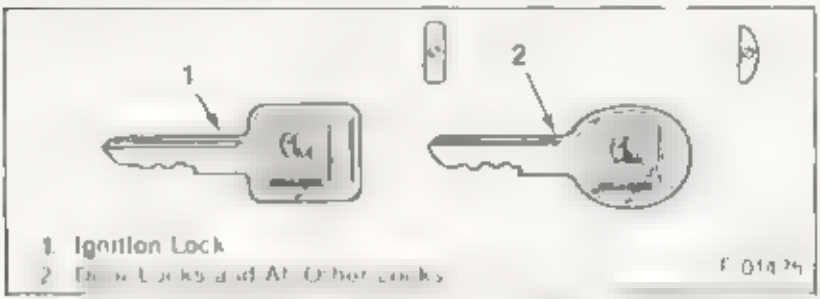
However, this does not prevent subsequent alteration of this vehicle from a bus, MPV or truck into a school bus. In such a situation, the vehicle alterer should affix a vehicle alterer's label to this vehicle. This label should indicate the name of the vehicle alterer, the month and year of alteration,

that as altered the vehicle conforms to all applicable Federal Motor Vehicle Safety Standards and the new type classification of the vehicle, i.e. school bus.

KEYS

Two different keys are provided for the locks on your vehicle. The key code is stamped on the knockout plug in each key head.

- **Key with square head** — for the ignition lock only
- **Key with oval head** — for all other locks



1. Ignition Lock
2. Door Locks and All Other Locks

E 01424

For vehicle security

- Record the key code numbers, then knock the plugs out of the keys.
- Keep the key codes in a safe place such as your wallet — not in the vehicle.

If the original keys are lost, duplicates can be made using the key codes. Stamped on the key is a letter and a number; the proper key blank needed for duplication is identified. Contact any GM dealer or locksmith.

If you park in an attended lot, leave only your square-head ignition key. Take the oval-head key with you. This will help prevent theft of your vehicle or any locked compartment.

It is a good idea to carry an extra key to the door in your wallet or purse, should you accidentally lock your regular keys in the vehicle. To help protect your vehicle and its contents against theft, General Motors has provided anti-theft features which would also make it inconvenient and possibly expensive to enter the vehicle if you are locked out.

DOORS AND DOOR LOCKS

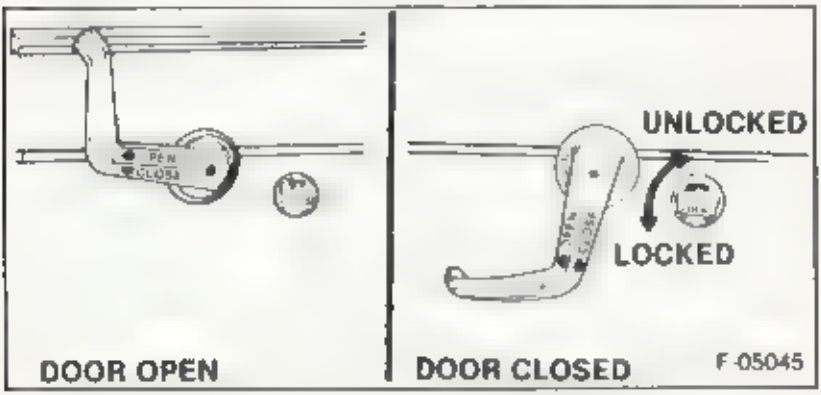
ALWAYS LOCK THE DOORS

CAUTION: To help reduce the risk of personal injury in an accident, always lock the doors when driving. Along with using the safety belts properly, locking the doors helps prevent people from being thrown from the vehicle. It also helps prevent unintended opening of the doors and helps keep out intruders.

SLIDING DOOR

Each time the sliding door is closed both the front and rear edges of the door should be checked to see that they are latched and securely shut

To open the sliding door rotate the handle upward and slide the door rearward.



To close the door, rotate the handle slightly downward to release the hold open catch slide the door forward until the rear latch engages and then rotate the handle downward to pull the door in against the body at the rear

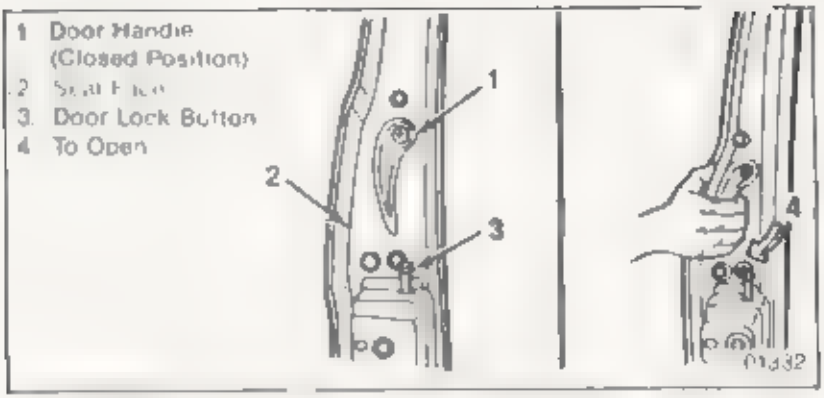
The sliding door can be locked from the inside by rotating the lock knob counterclockwise This knob is to the right (rear) of the handle The door can be locked from the outside by using the key

If your vehicle is equipped with optional power door locks, the vehicle has a pulse lock system The pulse lock system will operate as follows If the sliding door is open and the power door locks are activated, the sliding door will not lock immediately However upon closing the door the system is activated The system will cycle approximately 5 seconds after the sliding door has closed. Then the sliding door and rear doors will automatically lock

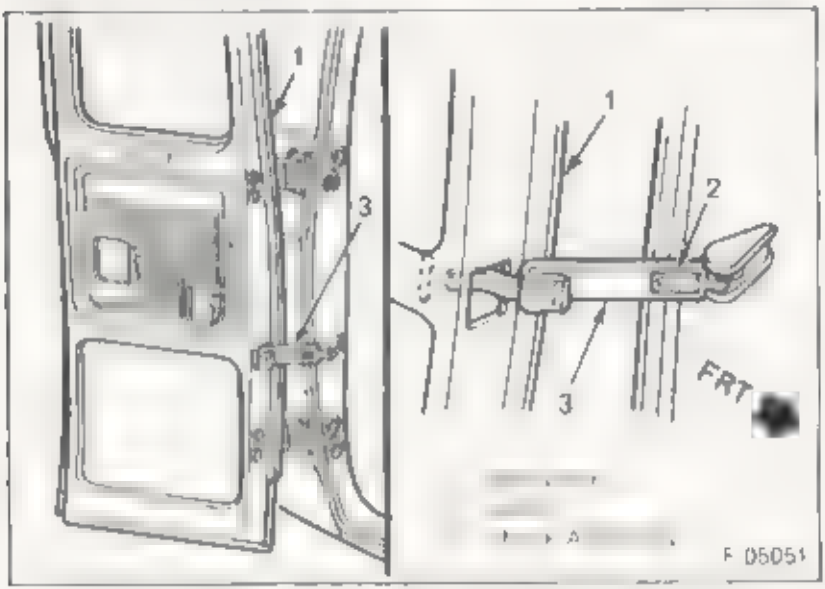
SWING-OUT SIDE DOORS

The optionally available swing-out doors are operated as follows

- Open the front swing-out door — then press the door handle located on the seat-face of the rear door as shown in the illustration When closing the doors, close the rear door first. Make certain both doors have closed and latched properly
- The front swing-out door can be locked from inside the vehicle by sliding the lock lever rearward The lever is located just below the inside door handle The door can also be locked from the outside with the oval-head key. The rear swing-out door can be locked by pressing the door lock

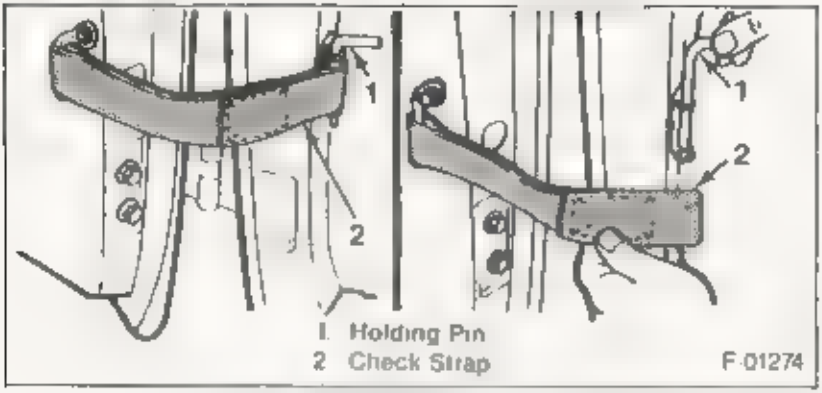


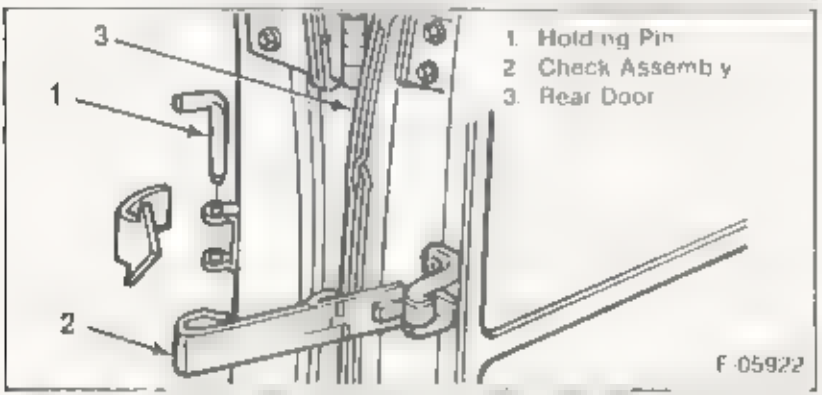
[illegible] located just below the door handle on the seat back. The door can also be locked from outside the vehicle by pressing the door lock button and closing the door.



A check system is provided to keep the doors from opening farther than 90 degrees. If you need [illegible] than is as shown, follow the instructions printed on the label located on the check assembly.

REAR DOORS





The right rear door can be locked from the outside with the oval head key. The right rear door latch is released by pressing the button in the handle. The right rear door is opened by first opening the right front door, then lifting up and releasing over all the way inside upper edge of the door. Check straps and check assemblies keep the doors from opening any further than fully opened. When closing the doors, close the right door first. Finally close the right door and make certain both doors are latched.

To remove the check straps, close the doors slightly to remove tension from the holding pin and then lift the pin up and slide the strap loop free. Do this on each door. Replace the straps in the same manner. To remove the check assembly, close door slightly to remove tension from the holding pin. Raise the pin up and swing the check assembly free. Replace the assembly in the same fashion.

FRONT DOORS

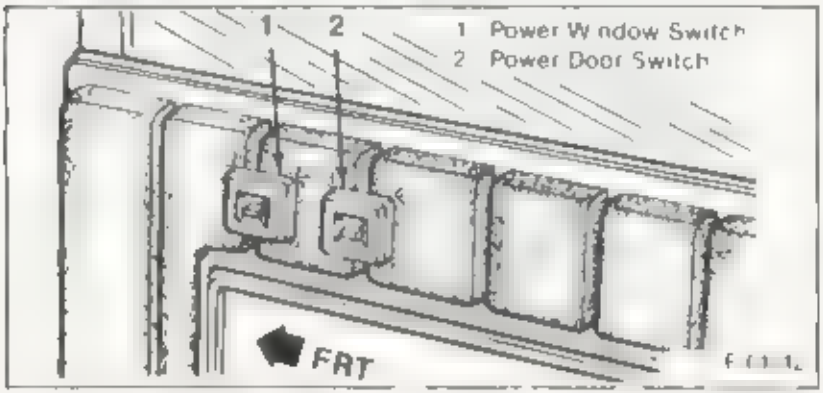
The doors can be locked from the inside by pressing the passenger guard door lock button located on the upper door panel. The doors can be locked from the outside by pressing the door lock button and closing the door.

The front doors can also be locked by using the oval head key.

All models have as a standard safety feature overriding door locks. When the doors are locked, the door latch mechanism is inoperative preventing accidental opening of the door by movement of the inside handle.

POWER DOOR LOCKS

The optional power door locks allow you to lock or unlock your doors by operating the switch marked LOCK located on either door panel. The automatic locking mechanism does not interfere with manual operation of any door lock button. The doors will not unlock or open by using the inside door handle when the lock button is pressed, but can be unlocked individually by lifting the lock button. The power lock will also operate the rear panel door locks and the sliding door lock.



WINDOWS

MANUAL WINDOW CONTROL

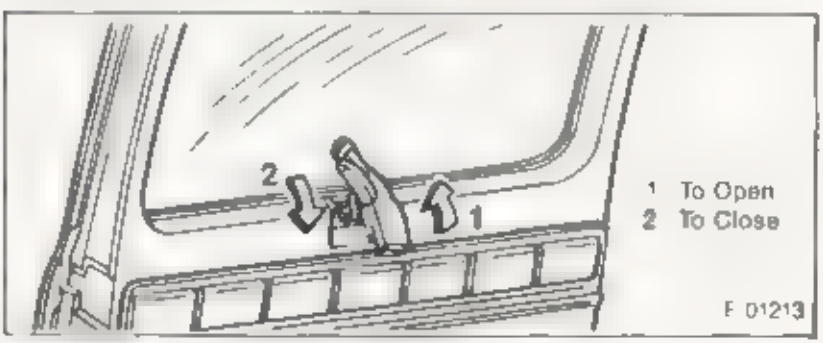
Door windows can be raised or lowered by rotating the hand crank located in the door panel.

POWER WINDOWS

The optional power windows have an ignition interlock so the windows cannot be operated unless the ignition switch is in the ACC position. A master control for all windows is provided on the driver's door. An individual switch is provided under the passenger window.

SWING-OUT TYPE WINDOWS

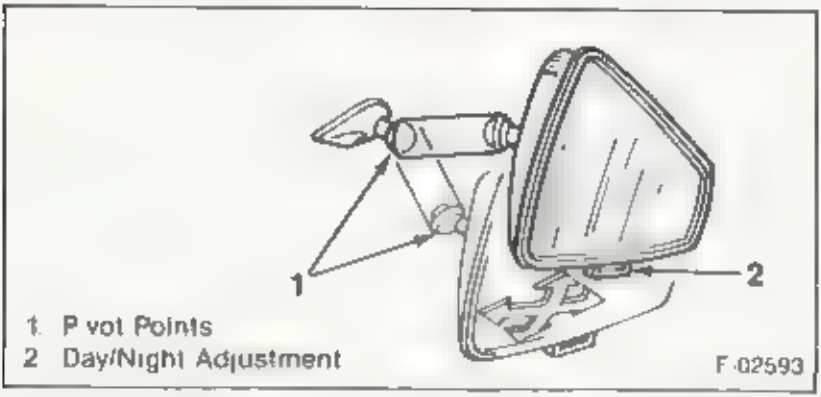
These windows, on models so equipped, may be opened or closed with finger operated swing latches.



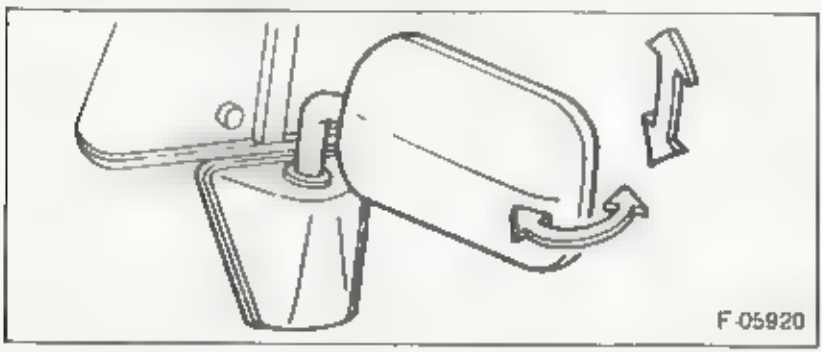
If it is desired to drive with a rear window open, refer to "Engine Exhaust Gas Caution (Carbon Monoxide)" in Section 2.

MIRRORS

Inside Rearview Mirror



Outside Rearview Mirror(s)



Adjust the outside mirror(s) so you can just see the side of your vehicle. This helps you determine the location of objects seen in the mirror.

Convex Rearview Mirror

Your vehicle may have an optional convex outside right-hand mirror. (A convex mirror has a curved surface.)

- Use care when judging the size or distance of a vehicle or other object seen in this convex mirror — such objects will look smaller and appear farther away than when seen in a flat mirror.
- Use your inside mirror (or glance rearward) to determine the size and distance of objects seen in the convex mirror.
- Adjust the mirror so you can just see the side of your vehicle.

SEAT CONTROLS

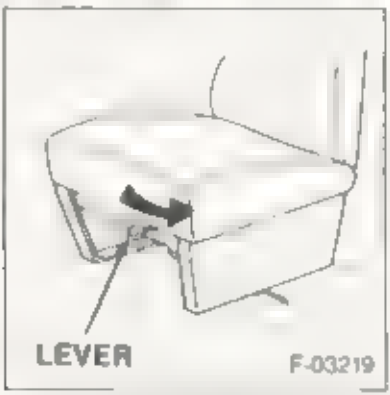
ADJUST DRIVER S SEAT WHILE PARKED

CAUTION Do not adjust the driver s seat while the vehicle is moving The seat could move and cause a loss of control

BUCKET SEATS

The front seats may be adjusted forward or rearward by moving the control lever at the front of the seat Move the control lever toward the seat to release the locking mechanism then exert slight body pressure to move seat to the desired position Release the lever to lock the seat in position

After adjusting seat push the seat back and forth to be sure it is locked Take the vehicle to your dealer for service if the seat does not lock



PASSENGER S SEAT

A manual passenger's seat may be moved forward or rearward to the desired position Lift the control lever at the front of the seat

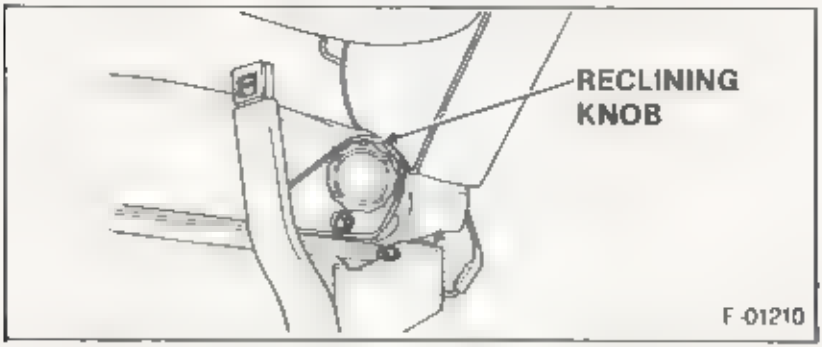
RECLINING BUCKET SEAT

Seatback Position When Moving

CAUTION To reduce the risk of sliding under the lap belt during a collision an occupied reclining seat should not be reclined any more than needed for comfort The seatback and safety belts provide best restraint only when the rider is sitting well back and straight up in the seat (The lap belt is designed to spread the force of a collision over the hipbone If you are reclined the lap belt may slide past your hips and apply restraint forces directly to the abdomen Therefore in the event of a frontal collision the risk of personal injury will increase with increasing recline of the seat back)

Do not adjust the reclining seatback on the driver s seat while the vehicle is moving The seatback could jerk and cause a loss of control

The optional front reclining bucket seat is operated by turning the adjustment knob located on the inboard side of the seat until you reach the desired position



The angle of the moveable arm rest may be adjusted for your comfort by turning the Phillips head screw which is located at the rear of each arm rest between the arm rest and the seat

After adjustment push the seat back and forth to be sure it is locked. Take the vehicle to your dealer if the seat does not lock

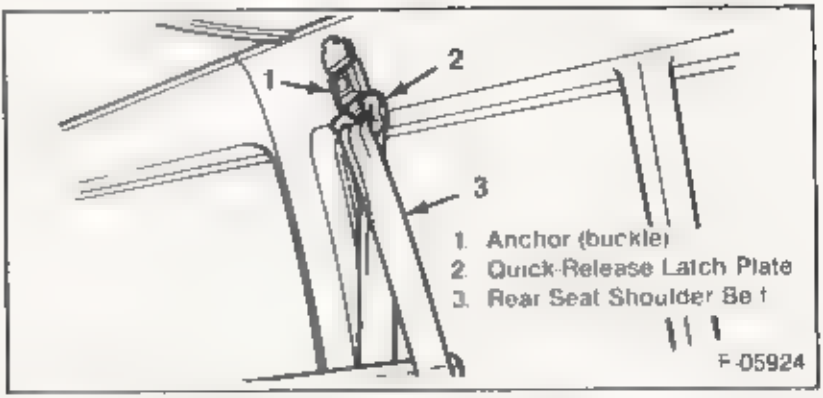
SECOND, THIRD AND FOURTH SEATS

Always Check The Seat

CAUTION To reduce the risk of personal injury, follow all instructions when installing the removable seat. After installing the seat, always check to see that it is locked firmly to the floor at both the front and rear. Push back and forth on the seat. Also, be sure to reattach the quick-release latch plate to the anchor (in the roof) for the shoulder belt(s) on the optional bench seat or Travel bed. Failure to lock the seat securely to the floor could increase the risk of personal injury in an accident.

Each optional bench seat is fastened to the floor by two cam-type latch assemblies and hooked retainers. Cam-type latch assemblies and hooked retainers fit onto the anchor pins in the floor anchor plates. When the latch assemblies are pressed, their cams and the hooks of the retainers are drawn onto the anchor pins for seat attachment. Also, the quick-release latch plate for the shoulder belt must be disconnected from the anchor plate in the roof. The seats can then be quickly removed.

When re-installing each seat, take care that the front latches and rear retainers are fully seated on the anchor pins and that the front latches are fully secured.



TRAVEL BED

CAUTION: To reduce the risk of sliding under the lap belt during a collision, do not use the Travel Bed in its reclined position while the vehicle is moving. In its bench seat position, the Travel Bed and its safety belts provide best restraint only when the rider is sitting well back and straight up in the seat. The lap belt is designed to spread the force of a collision over the hipbone. If you are reclined, the lap belt may slide past your hips and apply restraint forces directly to the abdomen. Therefore, in the event of a frontal collision, the risk of personal injury may increase if the Travel Bed is used in the reclined position.

The Travel Bed option offers either comfortable sleeping facilities or can be folded to provide an additional bench seat, with ample cargo space behind it.

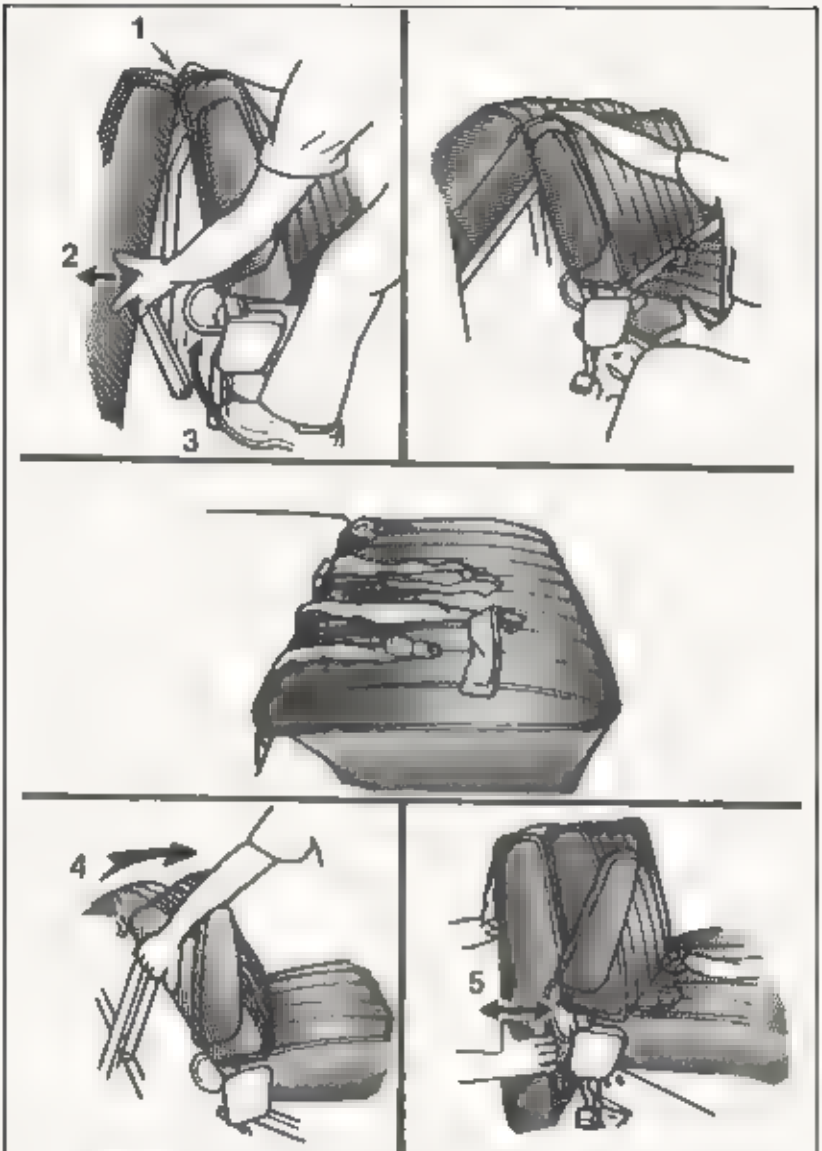
To Make Into A Bed

1. Relieve pressure on latches by pulling the seat backrest forward while pushing foot operated lever inward to release the backrest extension frame.
2. Move the folding backrest and hinged extension rearward to form bed.
3. Place the seat belts in crevice between seat cushion and backrest.

To Make Into A Bench Seat

1. Reach in between the seat backrest and the seat cushion and place all the seat belts on the seat cushion.
2. Grasp the backrest extension and move the seat backrest, forward to full upright position.
3. Be certain that the seat backrest extension is securely latched when it is in the stowed (vertical) position. Push back and forth now and then on any folding rear seatback to be sure it is locked. Take the vehicle to your dealer for service if the seatback does not lock.

The Travel Bed can be removed and reinstalled in the same manner as the second seat in your vehicle.



1. Relieving Pressure On Latches
2. Releasing Hinged Extension
3. Push Release Lever Inward
4. Move Forward
5. Make Sure Backrest Extension Is Securely Latched

B-09788

SAFETY BELT SYSTEMS

CAUTION To help reduce the risk of personal injury in collisions or sudden maneuvers, use the safety belts following these instructions on their proper use, maintenance, and use with child restraint systems. This includes pregnant women. Pregnant women should select a seat with a lap-shoulder belt whenever possible, the lap portion should continue to be worn low and snug through the pregnancy.

Children small enough for child restraints (as indicated on the label of such restraints) should always be transported in them. Accident statistics indicate children are safer when properly restrained in the rear seat rather than in the front seat. Accordingly General Motors recommends children be restrained in the rear seat. General Motors also recommends that an adult be seated adjacent to an infant who is in an infant restraint. If the driver is the only adult in the vehicle, the infant restraint may be placed in the front seat.

Children who have outgrown child restraint systems should use the vehicle's safety belts and sit in the rear seat (if so equipped). If the child's seating position has a shoulder belt which is on or very close to the face or neck, either move the child closer to the center of the vehicle or if available, place the child in a center seating position with a lap belt. Once a child has grown enough so that the shoulder belt is no longer on or very close to the face or neck, a seating position with a shoulder belt should be chosen whenever possible.

NEVER

- Put the lap portion of a safety belt over any armrest.
- Wear a shoulder belt under your arm nearest the outer panel.

- Use a belt for more than one person at a time.
- Wear the belts twisted or with a buckle release button facing downward or inward.
- Let the belt system become damaged by a door or seat.

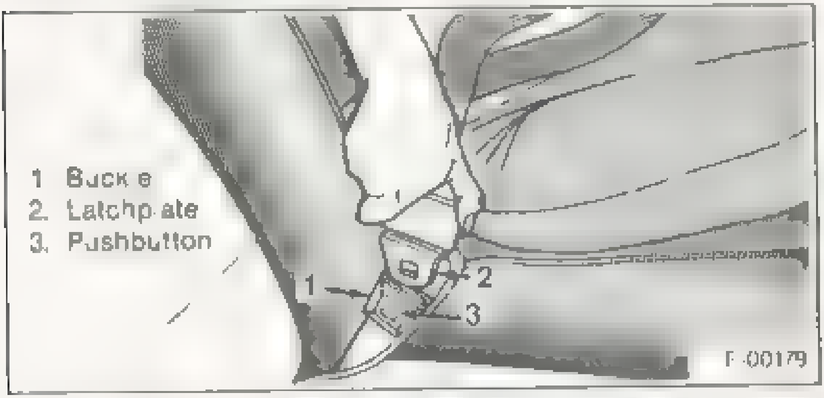
SAFETY BELT REMINDER LIGHT

When the key is turned to "RUN" or "START", a light will come on for four to eight seconds to remind people to fasten their safety belts. Unless the driver's safety belt is buckled, a buzzer will sound at the same time.

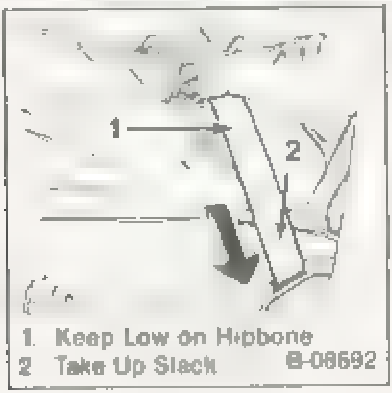
If the safety belt or reminder system does not work as described, see your dealer for service.

LAP-SHOULDER BELT

Adjust the seat as needed and sit well back and straight up. Then pull the belt across your lap and push the latch plate into the buckle until it clicks. If the belt is not long enough to permit this, refer to "Safety Belt Extender", following.



To [illegible] the risk of [illegible] under the belt during a collision, position the belt across your lap [illegible] low on your [illegible] possible and pull [illegible] toward the [illegible] so the retractor [illegible] take up the slack.



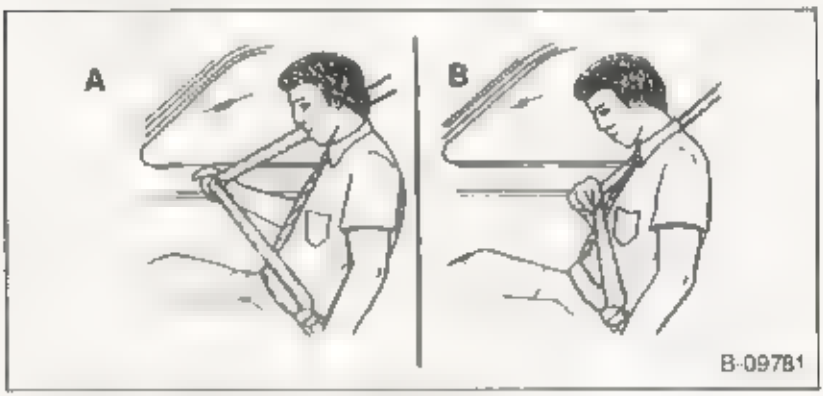
The lap shoulder belts on the left-hand side and for the front seat passenger are designed to lock only during a sudden stop or impact. At other times they should move freely. In addition, if the lap portion of the passenger belt is pulled all the way out, this switches the retractor to a ratcheting mode so that as the belt retracts it cannot be pulled out until it is fully retracted. Refer to "Child Restraint" in this section for details.

The lap shoulder belts at the rear right-hand side of the vehicle (optional fourth seat) work like the ratcheting mode described previously. The retractor will not emit a ratchet sound, but the belt can not be pulled out until it is fully retracted. In a single motion, pull the belt across your lap enough to push the latch plate into the buckle until it clicks. If the webbing locks before the latch plate reaches the buckle, let it rewind fully into the retractor to unlock it so the belt can be pulled out to the proper length. Position the belt as described above.

3. If a front seat shoulder belt is too tight:

   A. Pull the shoulder belt out at least 130 millimeters (five inches) and let it return to your chest.

   B. Then pull down on the shoulder belt no more than needed to ease pressure, 25 mm (one inch) and let go.



4. To get rid of the slack, pull the belt out as you did in Step 3A above.

Keep any shoulder belt slack to a minimum, no more than 25mm (one inch). Belt slack beyond the specified amount could significantly reduce the amount of protection in an accident because the belt is too loose to restrain you as intended.

CAUTION: To help reduce the risk of personal injury in an accident, if a shoulder belt is on or very close to a child's face or neck, then either (1) move the child toward the center, away from the shoulder belt, or (2) if available, place the child in a center seating position and use the lap belt.

5. To unfasten the belt push the button on the buckle. The retractor should rewind the belt when the buckle is unlatched. If the belt will not retract press the button located on the top of the retractor cover. To help prevent damage to the safety belt and interior trim before closing the door be sure the belt is fully retracted and the latch plate is out of the way.

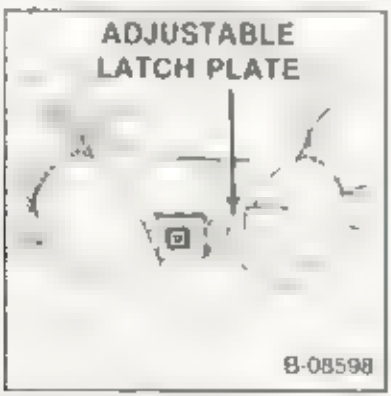
BENCH SEAT OUTBOARD LAP BELTS

Second and third bench seat outboard lap belts (near the side door) have retractors which are designed to take up extra webbing.

1. In a single motion pull the right-hand outboard lap belt across your lap enough to push the latch plate into the buckle until it clicks. If the webbing locks before the latch plate reaches the buckle let it rewind fully and its retractor to unlock it. Then the belt can be pulled out to the proper length.
2. These belts should be positioned worn and released as described previously under "Lap Shoulder Belt". Adjust the belt to a snug fit by pulling the belt firmly across your lap toward the retractor so it can take up slack. Never put a lap belt over any seat's armrest.

BENCH CENTER SEATING POSITIONS

1. Lap belts at center seating positions on regular bench seats and all seating positions on the optional Travel Bed also should be positioned worn and released as described previously; however they do not have retractors. Adjust the belt to a snug fit by pulling on the end coming from the latch plate.



2. To lengthen the lap belt at center seats or on the Travel Bed place the latch plate at an angle to the belt webbing and pull on the latch plate. The belt should then slide easily.

SAFETY BELT INSPECTION

Now and then check that belts buckles latch plates retractors anchorages reminder systems and guide loops work properly: look for loose parts or damage (without disassembly) that could keep the restraint system from doing its job. Have a belt assembly replaced if the webbing has been cut or otherwise damaged. Replace belts retractors and hardware in use during all but a minor collision. Also restraint systems should be replaced and anchorages properly repaired if they were in areas damaged by a collision.

whether the belt was in use or not. If there is any question, replace the belt system. Damage, whether visible or not, could result in a serious personal injury in the event of an accident.

SAFETY BELT EXTENDER

If a safety belt cannot be fastened because it is not long enough, General Motors will be pleased to furnish a safety belt extender without charge. However, General Motors safety belt extenders are designed for use only on original equipment seats that have not been modified. Therefore, extenders will not be furnished for non-Original equipment, Materials or modified seats. Contact your dealer, remember to bring the heaviest coat expected to be worn to obtain the proper length extender. Be prepared to choose a front or rear seat position where the extender will be used. An extender measured for a front seat may not be safe in a rear seat, and one measured for the rear may not be safe in a front seat. Remember also that the extender intended for this vehicle may not be safe for use in another vehicle, and that the extender from another vehicle may not be safe for use in this vehicle. For example, an improper extender might come apart during an accident causing the user to be injured. The safety belt extender is to be used only by the person for whom it was measured. Use by others or in another vehicle could reduce safety belt restraint effectiveness in an accident and result in personal injury. Do not use the extender whenever the safety belt can be fastened without it.

To use the extender, sit in the seat measured for the extender (as indicated on the extender's label), push the vehicle's safety belt latch plate into the extender's buckle, and the extender's latch plate into the safety belt buckle. To unfasten the belt, push in the button in the center of the extender buckle so that it remains attached on the inboard side. This helps avoid damaging the extender or interior trim. Keep the extender in the vehicle for which it was intended.

CHILD RESTRAINT

CAUTION: Children small enough for child restraint (as indicated on the label of such restraints) should always be transported in them. Children who have outgrown child restraint systems should wear safety belts and sit in the rear seat. Accident statistics indicate that children are safer when properly restrained in the rear seat rather than in the front seat. Accordingly, General Motors recommends the child be restrained in a rear seat (when available). General Motors also recommends that an adult be seated adjacent to any infant who is in an infant restraint. If the driver is the only adult in the vehicle, the infant may be placed in the front seat.

Children who have outgrown child restraint systems should use the vehicle's safety belts and sit in a rear seat (when available). If the child's seating position has a shoulder belt which is on or very close to the face or neck, either move the child closer to the center of the vehicle, or if available, place the child in a center seating

(Continued)

CAUTION (Continued)
position with a lap belt. Once a child has grown enough so that the shoulder belt is no longer on or very close to the face or neck, a seating position with a shoulder belt should be chosen whenever possible.

Any unrestrained child could be injured by striking the vehicle's interior or by ejection from the vehicle during an accident or driving maneuver. Never allow a child to be held by another occupant instead of being properly restrained. If not properly restrained, the child could strike the vehicle interior or be crushed by the person holding the child or by other occupants.

Be sure to follow all installation and safety instructions that come with any child restraint system. Child restraint systems are designed to be secured in vehicle seats either by the lap belt or the lap portion of the lap shoulder belt in that seating position. The child must also be secured within the restraint by the means provided by the child restraint manufacturer. If the child restraint is not properly secured, the child risks personal injury in the event of a collision.

Using A Lap Belt That Has No Retractor

When securing a child restraint with a lap belt that has no retractor, pull the excess webbing through the adjustment feature, then take these steps:

- If the lap belt does not fit the child restraint as it should, or still has too much slack, twist the buckle end of the belt several times to shorten it before rebuckling. Be sure the button on the buckle faces upward or outward.
- Once installed, push and pull the child restraint in all directions to be sure it is secure. If it comes loose, flip the adjustable latch plate over before reinserting it in the buckle.
- If the child restraint still is not secure, use a different seating position in the vehicle, and contact your dealer and the child restraint manufacturer for help.
- Secure the child within the restraint in accord with the manufacturer's instructions.

Child Restraint With Top Strap

Should you choose to use a top strap-equipped child restraint in this vehicle, you may either want to have your dealer install the top strap anchor bracket, or learn from the dealer where to attach it. (The anchor bracket is supplied by the company that makes the child restraint system.)

Child restraint systems that require a top strap are not recommended for use in the following locations in this vehicle because there is no appropriate place to attach the top strap:

- In any seating position on the third seat in 110-inch wheelbase vans.
- In any seating position on the fourth seat in 125-inch wheelbase vans.
- In the center or right outboard seating position (as you face forward) on the third seat of 125-inch wheelbase vans when there is no fourth seat. (Any seating position on the third seat of 125-inch wheelbase vehicles may be used if there is a fourth seat.)

If the right front lap belt is pulled all the way out, this switches the retractor to a ratcheting mode to lock the lap belt. In this mode as the belt retracts it cannot be pulled out until it is fully retracted.

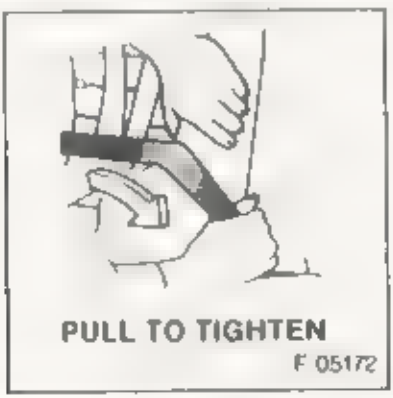
If you use any other right side lap-shoulder belt, pull the excess lap belt webbing toward the retractor.

If you use a passenger left side lap shoulder belt, pull the excess lap belt webbing through the adjustment feature.

Installing A Child Restraint On A Seat With A Lap Belt Retractor

First locate the child restraint system on the vehicle seat and install any top strap and anchor it. Then:

1. Pull the lap belt out and position it around or through the child restraint in accord with the restraint's instructions, and buckle the lap belt.
2. Pull the remaining webbing out of the retractor to switch it to the ratchet mode. Then allow the excess webbing to retract.
3. Grasp the webbing between the child restraint system and retractor and pull it tight around the entire child restraint while allowing it to feed into the retractor. Listen for clicking to assure it is in the ratcheting mode.



4. Try to move the child restraint system and webbing to assure the lap belt is holding it tightly.
5. Secure the child in the restraint in accord with the manufacturer's instructions.

Returning Ratcheting Retractor To Normal Use

Unbuckling the belt and letting it retract all the way allows the belt to move freely again. In that mode, it is designed to lock only during a sudden stop or impact.

SECTION 2
STARTING AND OPERATING

ENGINE EXHAUST GAS CAUTION (CARBON MONOXIDE)

CAUTION Do not breathe exhaust gas because it contains carbon monoxide which by itself has no color or odor. Carbon monoxide is a dangerous gas. It can cause unconsciousness and can be lethal.

If at any time you think exhaust fumes are entering the vehicle, have the cause determined and corrected as soon as possible. If you must drive under these conditions, drive only with all windows fully open.

Protect against carbon monoxide entry into the vehicle body. The best way is to keep the engine exhaust system, vehicle and body ventilation system properly maintained. We recommend that the exhaust system and body be inspected by a competent technician:

- Each time the vehicle is raised for an oil change.
- Whenever a change is noticed in the sound of the exhaust system.
- Whenever the exhaust system, underbody or rear of the vehicle is damaged or becomes corroded.

Refer to your Maintenance Schedule booklet for parts requiring inspection.

To allow proper operation of your vehicle's ventilation system, keep the air inlet grille in front of the windshield clear of snow, leaves or other obstructions at all times.

Do not park with the engine running or idle this vehicle for more than 10 minutes with the ventilation system control switch in the OFF position. Even with the ventilation system on, running the engine while parked or stopped for longer periods of time is not recommended. Entry of carbon monoxide into the vehicle body is possible with a poorly repaired, damaged, or corroded exhaust system or vehicle body.

Do not run the engine in confined areas (such as garages or next to a building) any more than needed to move the vehicle. When the vehicle has to be stopped in an unconfined area with the engine running for any more than a few minutes, take the following steps:

A. Adjust the heating or cooling system to force outside air into the vehicle as follows:
   1. On vehicles not equipped with air conditioning, set the fan to intermediate or high speed and the upper control lever to any position.

(Continued)

CAUTION (Continued):

2. **On vehicles equipped with manual air conditioning, set the fan to an intermediate or high speed and the upper control lever to any position except "OFF" or "MAX".**

B. **Keep the exhaust tailpipe area clear of snow and other material to help reduce the buildup of exhaust gases under the vehicle. This is particularly important when parked in blizzard conditions.**

Driving with rear doors or optional swing-out rear door glass open is not recommended. Under some conditions, exhaust gases may be drawn into the vehicle. If the rear doors or optional swing-out rear door glass must remain open for some reason while moving, or if electrical wiring or other cable connections to a trailer must pass through the seal between the rear doors or the optional swing-out rear door glass and the body, follow these precautions.

- **Close all windows.**
- **Adjust the heating or cooling system to force outside air into the vehicle as described above, but set the fan to high speed.**
- **On vehicles with outside air vents in or under the instrument panel, open the vents fully.**

Take special care to prevent the chance of carbon monoxide exposure if the vehicle is modified for recreational or other usage. Also, some recreational vehicle gas powered appliances (such as generator lights, refrigerators, stoves and heaters) may give off carbon monoxide. Use these appliances only if there is enough ventilation and follow the appliance manufacturer's instructions regarding use of these items.

NEW VEHICLE "BREAK-IN" PERIOD

You can drive your new vehicle from its very first mile/kilometer without following a formal "break-in" schedule. However, there are things you can do during the first few hundred miles/kilometers of driving that will add to the performance and economy of your vehicle.

We recommend you limit your speed during the first 500 miles (800 kilometers) to a maximum of 55 mph (90 km/h), but do not drive for long periods at any one constant speed, either fast or slow. During this time, avoid full throttle starts and, if possible, avoid hard stops especially during the first 200 miles (320 kilometers) of driving.

Always drive at moderate speed until the engine has completely warmed up.

If you plan to use your new vehicle for trailer towing, refer to the following.

TRAILER TOWING

Since this vehicle is designed and intended to be used mainly as a load-carrying vehicle, towing a trailer will affect handling, durability and

economy. Your safety and satisfaction depend upon proper use of correct equipment. Also, you should avoid overloads and other abusive use.

The maximum loaded trailer weight you can pull with your vehicle depends on your intended use and what special equipment has been installed on it.

Information on trailer towing ability, special equipment required, and optional equipment available should be obtained from your dealer.

Ask for the "Recreational and Trailering Guide" brochure. Or write: Customer Assistance Department, Chevrolet Motor Division, P.O. Box 7047, Troy, Michigan 48007. (In Canada, write to: General Motors of Canada Limited, Customer Services Department, Oshawa, Ontario L1J 5Z6.)

TIRES

When towing trailers, inflate the tires to the cold tire pressures (PSI Cold) shown on the Certification Label (on the rear edge of the driver's door) or the "Tire Inflation Pressure" charts at the back of Section 5.

Remember that when a trailer is connected, the trailer tongue weight is part of the load being carried by the vehicle and therefore is included in the GVW of the vehicle.

MAINTENANCE

More frequent service is required when using your vehicle to pull a trailer. Refer to the Maintenance Schedule booklet for Automatic Transmission Fluid, Engine Oil, and Rear Axle Lubricant change requirements for trailering.

Now and then, check that all trailer hitch bolts and nuts are tight. Also, refer to the Maintenance Schedule booklet and the Index for the schedule of important facts on belts, cooling system care, and brake adjustment.

BREAK-IN SCHEDULE

Refer to the new vehicle break-in information in this manual. Also, we recommend you drive your new vehicle for 500 miles (800 kilometers) before trailer towing. At the end of this 500 mile (800 kilometer) break-in period, avoid speeds over 50 mph (80 km/h) and full throttle starts during the first 500 miles (800 kilometers) of trailer towing.

CAUTION

BRAKES — To help avoid personal injury due to poor braking action:

- **Trailer brakes of adequate size are required on trailers of more than 450 kilograms (1 000 pounds) loaded weight.**
- **If you use trailer brakes with this vehicle, follow the installation and balance instructions of the trailer brake manufacturer.**

Continued

CAUTION (Continued)

- Do not tap into the vehicle's brake system if the trailer brake system uses more than 0.3 cubic centimeters (0.02 cubic inches) of fluid from the vehicle's master cylinder. In this case, the vehicle's brake fluid capacity will not be enough to operate both the vehicle and trailer brakes under all kinds of use.
- All brake fluid parts must be able to stand 20 650 kPa (3,000 psi). The brake fluid tap must be made to the master cylinder port supplying fluid to the rear brakes. Copper tubing is subject to fatigue failure and must not be used.

HITCHES — To help avoid personal injury due to sway caused by such things as crosswinds, large trucks passing or road roughness, or due to separation of the trailer:

- A properly installed and adjusted (1) frame mounted, weight distributing hitch and (2) sway control with enough capacity are required for trailers more than 1 800 kilograms (4,000 pounds) loaded weight.
- Keep the trailer tongue load at 10 percent of the loaded trailer weight for dead-weight hitches and 12 percent for weight-distributing hitches. Tongue loads can be adjusted by proper distribution of the load in the trailer. This can be checked by weighing separately the loaded trailer and then the tongue.
- When you remove a trailer hitch, be sure to seal any mounting holes in the body. This will help prevent entry of exhaust fumes, dirt or water. (Refer to "Engine Exhaust Gas Caution (Carbon Monoxide)" at the beginning of Section 2.)

TRAILER TOWING TIPS

GETTING STARTED

[illegible] brakes by hand [illegible] the trailer brakes are working and the [illegible] electrical system is connected [illegible]

ENGINE COOLING

If your engine overheats, follow the steps under "Engine Cooling System Overheating" in Section 3.

LONG UPHILL GRADES

When going up long grades, you can reduce the chance of engine overheating by downshifting the transmission to a lower gear range and reducing speed to 45 mph (70 km/h) or below.

STEEP OR LONG DOWNGRADES

Before going down a steep or long grade, reduce speed and shift the transmission into a lower gear to help control your vehicle's speed. Try not to hold the brake pedal down too long or too often. This could cause the brakes to overheat and reduce brake effectiveness.

TRANSMISSION

Refer to the method for checking the transmission fluid level in "Service and Maintenance" in Section 5.

If your vehicle is equipped with an overdrive automatic transmission when you are towing a trailer more than 1 800 kilograms (4 000 pounds) we recommend you shift to third gear range ("D") instead of Overdrive for normal towing. This is not intended to interfere with the practice of manually downshifting on uphill and downhill grades.

PARKING

You should not park vehicles with trailers on a grade (hill). However, if you must park on a grade, these steps must be followed:

1. Apply the regular brakes.
2. Have someone place wheel blocks under the trailer wheels.
3. When the wheel blocks are in place, release the regular brakes until the blocks absorb the load.
4. Apply the regular brakes and then apply the parking brake; release the regular brake.
5. Shift the transmission to Park.

If the vehicle is parked on a grade, don't shift the transmission to Park until the trailer wheels are blocked and the parking brake is set. If you do, the weight of the vehicle and trailer may put so much force on the parking pawl in the transmission that it may be hard to shift out of Park.

When starting, if parked on a grade:

1. Apply the regular brakes and hold.
2. Start the engine while the transmission is in Park.
3. Shift into gear and release the parking brake.
4. Release the regular brakes and drive until the blocks are free.
5. Apply the regular brakes and have someone remove the blocks.

FUEL REQUIREMENTS (GASOLINE ENGINES)

(If your vehicle has an optional diesel engine, refer to the "Diesel Engine" information in Sections 2 and 5.)

LIGHT DUTY EMISSIONS

Some 5.7L and all 7.4L TBI engines in vehicles rated above 8500 GVWR have a fuel system equipped with a fuel pump timer. This timer helps prevent gasoline vapor formation by allowing the fuel pump to operate for 20 seconds when the ignition switch is turned to the "RUN" position. Refer to "Starting the Gasoline Engine" in this section.

Your light duty emission class vehicle engine (refer to the chart in Section 6) is designed to use regular grade unleaded fuel that meets ASTM D 439 (CGSB 3.15-M87 in Canada) specifications. Unleaded fuel must be used for the emission control systems to operate properly. Use of fuels not meeting ASTM specifications could cause poor performance and increase emissions. The use of good quality fuels containing proper detergent additives is necessary for good performance and emission control. Such fuels can be identified through media or point-of-purchase advertising.

The regular and continued use of supplementary fuel additives is unnecessary and not recommended unless required to solve specific operating problems which occasionally arise in some vehicles. In such instances, supplementary additives with official GM part numbers will be made available through your dealer for use in appropriate service applications.

Damage caused by the use of leaded or other improper fuels is not covered by the New Vehicle and Emission Control Systems Warranties. The effectiveness of the catalytic converter decreases if leaded fuel is used. Also, your vehicle may have the Computer Command Control System which includes an oxygen sensor. Leaded fuel will damage the sensor and may impair emission control, drivability and fuel economy. For more information refer to "Computer Command Control System" in Section 5).

Federal regulations require that pumps delivering unleaded fuel be labeled with the word "UNLEADED". Only these pumps have nozzles that fit the filler neck of your vehicle fuel tank.

In the United States, Federal law also requires that fuel octane ratings be posted on the pumps. The octane rating shown is an average of Research (R) octane number and Motor (M) octane numbers. In most parts of the United States, you should use unleaded fuel with an octane rating of at least 87.

Using unleaded fuel with an octane rating lower than stated above may cause persistent, heavy "spark knock". ("Spark knock" is a metallic rapping noise). If severe, this may lead to engine damage. If you detect heavy spark knock even when using octane of the recommended fuel rating, or if you hear steady spark knock while holding a steady speed on level roads, have your dealer correct the problem. Failure to take steps to stop such knocking is misuse of the vehicle and damage due to misuse is not covered under the New Vehicle and Emission Control Systems Warranties.

However, now and then you may notice light spark knock for a short time when accelerating or driving up hills. This is no cause for concern because you get the greatest fuel economy benefit from the fuel's octane rating when there is occasional light spark knock. Using fuel with a higher octane rating than that which allows occasional spark knock is an unnecessary expense.

HEAVY DUTY EMISSIONS

Your vehicle (refer to the chart in Section 6) is designed to use either regular grade unleaded or leaded fuel that meets ASTM D 439 (CGSB 3.15-M87 in Canada) specifications. Use of fuels not meeting ASTM specifications could cause poor performance and increase emissions. The use of good quality fuels containing proper detergent additives is necessary for good performance and emission control. Such fuels can be identified through media or point-of-purchase advertising.

The regular and continued use of supplementary fuel additives is unnecessary and not recommended unless required to solve specific operating problems which occasionally arise in some vehicles. In such instances, supplementary additives with official GM part numbers will be

made available through your dealer for use in appropriate service applications.

In the United States, Federal law requires that fuel octane ratings be posted on the pumps. The octane rating shown is an average of Research (R) octane and Motor (M) octane numbers. You should use fuel with an octane rating of at least 87.

Using fuel with an octane rating lower than recommended above may cause persistent heavy spark knock. (Spark knock is a metallic rapping noise.) If severe, this can lead to engine damage. If you detect heavy spark knock even when using fuel of the stated octane rating, or if you hear steady spark knock while holding a steady speed on level roads, have your GM dealer correct the problem. Failure to take steps to stop such knocking is misuse of the vehicle, and damage due to misuse is not covered under the New Vehicle and Emission Control Systems Warranties.

However, now and then you may notice light spark knock for a short time while accelerating or driving up hills. This is no cause for concern because you get the most fuel economy benefit from the fuel's octane rating when there is occasional light spark knock. Using fuel with a higher octane rating than that which allows occasional spark knock is an unnecessary expense.

FUELS CONTAINING ALCOHOLS

Fuels composed of blends of gasoline and alcohol (ethanol, methanol, cosolvents) are available. Some fuel suppliers voluntarily use labels of the type shown below to inform consumers that their gasoline contains alcohol. If such fuel blends are used, they must have the same minimum octane rating as specified for unleaded fuel without alcohol. Also, some states require the use of such labels. If you are not sure whether there is alcohol in the fuel you buy, ask the service station operator.

If you are not satisfied with the vehicle driveability and fuel economy provided by fuels containing alcohols, you may prefer to use unleaded gasoline that does not contain alcohol.

Ethanol

You may use properly blended fuels containing 10 percent or less ethanol (ethyl or grain alcohol) and still be covered by the New Vehicle and Emission Control Systems Warranties.

Methanol

Fuels containing 5 percent or less methanol (methyl or wood alcohol) may be suitable for use in your vehicle. They also contain sufficient quantities of appropriate cosolvents to prevent phase separation (according to proposed ASTM specifications) and ingredients to protect your vehicle's fuel system against corrosion of metals and damage to plastics and rubbers caused by methanol. However, the suitability of these fuels is not fully known at this time.

Check with the service station operator if you have any questions regarding whether the fuel contains appropriate cosolvents and corrosion inhibitors.

Do not use fuels containing more than 5 percent methanol under any circumstances. Fuel system damage or vehicle performance problems resulting from the use of such fuels are not the responsibility of GM and are not covered under the New Vehicle and Emission Control Systems Warranties.

NOTICE: Take care not to spill fuel during refueling. Fuels containing alcohol may cause paint damage, which is not covered under the New Vehicle Limited Warranty.

DIESEL FUEL REQUIREMENTS AND FUEL SYSTEM

A number of states and provinces have restrictions on the purchase of diesel fuel for light duty trucks, according to such things as permits or special taxes. Some of these restrictions apply only to residents, others to both residents and visitors. These restrictions can change. To find the current restrictions in any state, contact your auto club, the state police or other state officials.

FUEL REQUIREMENTS

NOTICE: The fuel injection pump, injection nozzles or other parts of the fuel system and engine can be damaged if you use any fuel or fuel additive other than those specifically recommended by GM. Such damage is not GM's responsibility, and is not covered by the new vehicle warranty. To help avoid fuel system or engine damage, please heed the following:

- **Some service stations mix used engine oil with diesel fuel. Some manufacturers of large diesel engines allow this, however, for your diesel engine, do not use diesel fuel which has been contaminated with engine oil. Besides causing engine damage, such fuel will also affect emission control. Before using any diesel fuel, check with the service station operator to see if the fuel has been mixed with engine oil.**
- **Do not use any fuel additive (other than as recommended under "Biocides" in this section). At the time this manual was printed, no other fuel additive was recommended. (See your GM dealer to find out if this has changed).**
- **Take care not to run out of diesel fuel. If you do run out of fuel, you may need to crank the engine longer to re-start it after fuel has been added. (Refer to "Running Out of Fuel" in this section).**

Your vehicle is designed to use either Number 1-D or Number 2-D diesel fuel. However, for better fuel economy, use Number 2-D diesel fuel whenever possible. At temperatures less than 7°C (20°F), Number 2-D fuel may pose operating problems (refer to "Cold Weather Operation" which follows). At colder temperatures, use Number 1-D fuel (if available) or use a "winterized" Number 2-D (a blend of Number 1-D and Number 2-D). This blended fuel is usually called Number 2-D also, but can be used in colder temperatures than Number 2-D fuel which has not been "winterized". Check with the service station operator to be sure you get the properly blended fuel.

Note that diesel fuel may foam during a fillup. This can cause the automatic pump nozzle to shut off even though your tank is not full.

COLD WEATHER OPERATION (DIESEL ENGINES)

Diesel fuel is sensitive to temperature. All diesel fuel has a certain amount of paraffin-like components, which are high in energy value and help improve fuel economy. But when temperatures are less than about 7°C (20°F), these paraffin components begin turning into wax flakes. If temperatures are low enough, these flakes can build up on the fuel filters and stop fuel from reaching the engine.

At low temperatures, wax flakes are more likely to form in Number 2-D fuel than in Number 1-D (or "winterized" Number 2-D) fuel. For best opeartion at temperatures less than 7°C (20°F), use Number 1-D, or Number 2-D which has been blended with Number 1-D for winter use. When

temperatures are consistently less than (or near) -18°C (0°F), use Number 1-D if at all possible. Bear in mind, however, that even Number 1-D fuel will form wax flakes when temperatures are extremely low.

If you are driving in temperatures less than -18°C (0°F) and do not have Number 1-D or "winterized" Number 2-D fuel in the fuel tank, kerosene can be added to reduce waxing. Kerosene should be added at a ratio of one gallon of kerosene to two gallons of diesel fuel. Because of the lower energy value of kerosene (and reduced fuel economy), it should be added only when anticipated temperatures are less than -18°C (0°F). Once kerosene has been added, the engine should be run for several minutes to mix the fuel.

NOTICE: Do not try to use home heating oil or gasoline in your diesel engine. Either heating oil or gasoline may cause engine damage.

The addition of kerosene will not unplug a filter plugged with wax. Warming a waxed filter to a temperature of 0°C to 10°C (32°F to 50°F) will return the wax to solution. Filter replacement is not normally required.

To improve cold weather operation, an engine block heater and fuel heater are on your diesel engine. (Refer to "Cold Weather Starting" under "Starting the Diesel Engine" in section 2 of this manual for information on the block heater.) The fuel heater is designed to come on when the fuel temperature is less than 4°C (40°F). It warms the fuel and helps stop wax flakes from building up in the fuel filter.

WATER IN FUEL

During refueling, it is possible for water and other contaminants to be pumped into your fuel tank along with the diesel fuel. This can happen if a service station does not regularly inspect and clean its fuel tanks or if a service station receives contaminated fuel from its supplier(s).

To protect your engine from contaminated fuel, there is a fuel filter system on the engine which allows you to drain excess water.

The system has a "WATER IN FUEL" warning light which will come on to warn of excessive water in the fuel system. The light is also designed to come on during engine starting to let you know the bulb is working. If the light does not come on, check the fuse and the bulb. If these are OK, see your GM dealer.)

If the light comes on any other time, the following chart may help pinpoint a specific problem.

"WATER IN FUEL" LIGHT CHART

PROBLEM	RECOMMENDED ACTION
• Light comes on intermittently.	Drain water from fuel filter.
• Light stays on-engine running	
1) Temperatures above freezing.	Drain fuel filter immediately. If no water is drained and light stays on – replace fuel filter.
2) Temperatures below freezing.	Drain fuel filter immediately. If no water can be drained — water may be frozen. Open air bleed to check for fuel pressure. If no fuel pressure replace filter.
• Light comes on at high speed or heavy accelerations.	Fuel filter plugged—replace.
• Light stays on continuously -engine stalls will not restart	
1) After initial start-up.	Fuel filter or fuel lines may be plugged. See your dealer.
2) Immediately after refueling–Large amounts of water probably pumped into the tank.	Fuel tank purging required. See "Fuel Tank Purge" procedure found in Section 2 of this manual.

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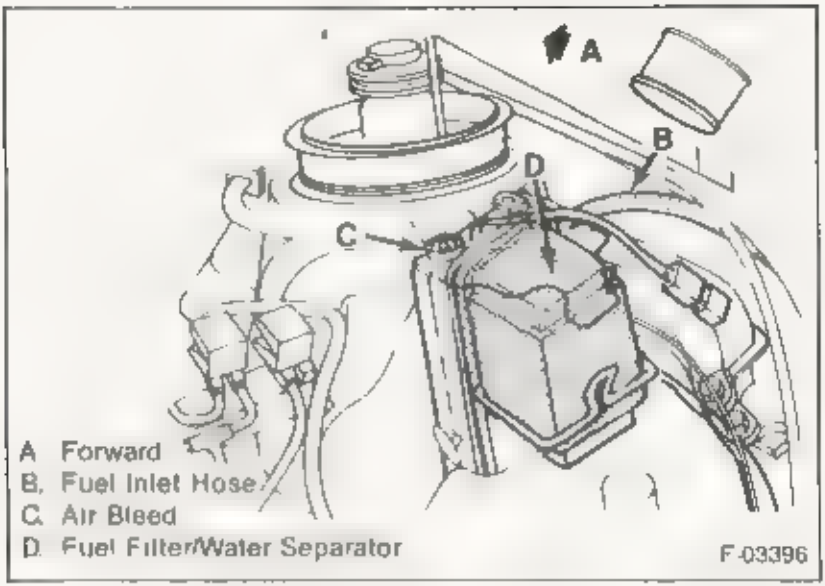
Continuing to drive your vehicle with the warning light on can result in serious damage to the fuel injection system or other parts of your engine.

FUEL FILTER—WATER DRAIN

Your diesel equipped truck has a multifunction filter for solid contaminants and water. The filter is mounted on the rear of the intake manifold on the engine.

Follow these steps to drain the fuel filter:

1. Stop and park the vehicle in a safe place. Turn off the engine and apply the parking brake.
2. Remove the vehicle fuel tank cap.
3. Place a fuel-resistant container under the filter drain hose.



4. With the engine off, open the water drain valve 2-3 turns. (When standing in front of the vehicle, the valve is located on the right side of the thermostat housing).
5. Turn the ignition key to "RUN". Allow the system to drain until clear fuel is observed out of the water drain hose.
6. Turn the ignition switch to "OFF" and close the water drain valve.
7. Install fuel tank cap. (Dispose of the drained mixture in a suitable manner. Refer to "Used Oil Disposal" under "Engine Oil Filter (Diesel Engines)" in Section 5 of this manual.)

If the "Water in Fuel" light comes on again after driving a short distance or the engine runs rough or stalls, a large amount of water has probably been pumped into the fuel tank. The fuel tank should be purged.

FUEL TANK PURGE

NOTICE: If the fuel tank needs to be purged, have this operation performed by a qualified technician. Improper fuel tank purging can result in fuel system damage.

BIOCIDES

In warm or humid weather, fungus and/or bacteria may form in diesel fuel if there is water in the fuel. Fungus or bacteria can cause fuel system damage by plugging the fuel lines, fuel filters or injection nozzles. They can also cause fuel system corrosion.

If fungus or bacteria has caused fuel system problems, have your GM dealer correct these problems. Then use a diesel fuel biocide to sterilize the fuel system (follow the biocide manufacturer's instructions). Biocides are available from your dealer, service stations, parts stores and other such places. See your GM dealer for advice on using biocides in your area, and for recommendations on which biocides to use.

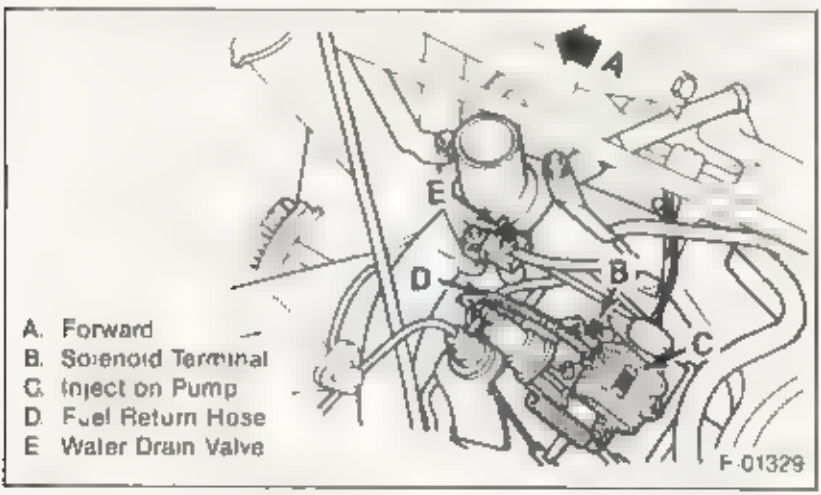
RUNNING OUT OF FUEL

Care should be taken not to run out of fuel, however. If the engine stalls and you suspect fuel exhaustion, the following procedure will help you start the engine.

First, determine if engine stall is due to fuel exhaustion. Open the fuel filter air bleed valve (refer to previous illustration under "Fuel Filter - Water Drain"). If air is present then the vehicle is probably out of fuel.

To restart the engine:

1. Add at least 2 gallons of fuel. If the vehicle is parked on a level surface, as much as 5 gallons may be required if the vehicle is parked on a slope.
2. Disconnect the fuel injection pump shut off solenoid wire.



3. With the air bleed open, crank the engine 10 to 15 seconds. Wait one minute for the starter to cool. Repeat until clear fuel is observed at the air bleed.

CAUTION: Do not allow too much fuel to flow from the bleeder. Diesel fuel is flammable, and may catch fire if dropped or left on hot engine parts. Use a cloth to wipe up any spilled fuel, before you try restarting the engine.

4 Close air bleed and reconnect injection pump solenoid wire
5 Repeat cranking 10-15 seconds until engine starts

FUEL FILTER—REPLACEMENT

The fuel filter is easily removed and installed with the use of a screw driver. To prevent fuel spillage — drain fuel from the filter by opening both the air bleed and water drain valve allowing fuel to drain out into a fuel resistant container.

To remove the filter:

1 Stop and park the vehicle in a safe place. Turn off the engine and apply the parking brake.
2 Remove the fuel tank cap. This releases any pressure or vacuum in the system.
3. Disengage both bail wires with a screw driver.
4 Remove the filter.
5 Clean any dirt off the fuel port sealing surface of the filter adapter and the new filter.
6 Install the new filter and snap into position with bail wires.
7 Close the water drain valve and open the air bleed. Connect a 1/8 I.D. hose to the air bleed port and place the other end into a fuel resistant container.
8 Disconnect fuel injection pump shut off solenoid wire. (Refer to the previous illustration)
9 Crank engine for 10-15 seconds and then wait one minute for the starter motor to cool. Repeat until clear fuel is observed coming from the air bleed.
10 Close the air bleed, reconnect the injection pump solenoid wire and replace fuel tank cap.
11 Start engine and allow it to idle for 5 minutes.
12 Check fuel filter for leaks.

OPERATION IN FOREIGN COUNTRIES

If your vehicle has a gasoline engine, it may require unleaded or leaded fuel. If your vehicle has a diesel engine, it requires diesel fuel. Fuel for your vehicle may not be available in other countries.

Before taking your vehicle to a foreign country, check to see if the proper fuel is available. Most major oil companies or domestic auto clubs should have this information. Foreign offices of major oil companies or auto clubs may also be of help. Be aware that use of leaded fuel or use of fuel that has a lower octane rating than is required by your vehicle will cause the emission control system to lose its effectiveness and can cause engine knock or serious engine damage. Neither GM International Export Sales nor GM will be responsible for damage to your vehicle as a result of using the improper fuel.

If you intend to take your vehicle outside the U.S. or Canada, contact GM International Export Sales, Service Department at the following address to find out what you must do in order to operate your vehicle in other countries, or for additional information and a copy of the applicable maintenance schedule.

General Motors Corporation
International Export Sales
Service Department
Room 3-132
General Motors Building
Detroit, Michigan 48202
When writing, please include

- Vehicle Model and Year
- the Vehicle Identification Number and
- the countries in which you plan to travel

IMPORTANT FACTS YOU SHOULD KNOW ABOUT FUEL ECONOMY AND HOW TO IMPROVE IT

How you drive, where you drive and when you drive affect how many miles/kilometers you can get from a gallon/liter of fuel. You can save fuel if you avoid "Jackrabbit" starts; maintain as constant a throttle position as traffic conditions allow once you have reached cruising speed; and avoid sudden stops which waste energy in the form of heat generated in braking. Frequent short trips, excessive idling and use of the air conditioner in cool weather (when "VENT" would provide adequate comfort) all can contribute to decreased fuel economy.

The careful attention you give your vehicle is far as maintenance is concerned will also help fuel economy. Proper engine and air cleaner maintenance, lubrication intervals, wheel alignment and tire inflation pressures when closely adhered to will pay dividends in improved fuel economy as well as longer vehicle life.

Fuel Selection (Gasoline Engines)—Light Duty Emissions

Use only unleaded fuel in your Light Duty Emission Class Vehicle that meets the octane ratings given under "Fuel Requirements (Gasoline Engines)" in this section of the manual. Unleaded fuel must be used for the emission control system to operate properly. Leaded fuel will damage the Computer Command Control system oxygen sensor, reduce the effectiveness of the catalyst and affect emission control. Using leaded fuel can also damage other parts of the emission control system and could result in loss of emission warranty coverage.

Fuel Selection (Gasoline Engines)—Heavy Duty Emissions

Your Heavy Duty Emission Class Vehicle engine is certified to meet all applicable emission requirements on regular grade unleaded or leaded fuel. Refer to the fuel information given under "Fuel Requirements" in this section.

Fuel Selection (Diesel Engines)

Use Number 2-D diesel fuel whenever possible; it will give better fuel economy than Number 1-D. Refer to "Diesel Fuel Requirements and Fuel System" in this section for guidelines on selecting the proper fuel.

STARTING THE GASOLINE ENGINE

To start an optional diesel engine refer to "Starting the Diesel Engine" which follows.

1. Apply the parking brake.
2. **Automatic Transmission** — Shift the transmission to Park or Neutral (Park preferred). A starter safety device is designed to keep the starter from operating if the shift lever is in any drive position. If you need to restart the engine while the vehicle is moving, shift the transmission to Neutral.

   Manual Transmissions — Push the clutch pedal to the floor and shift the transmission to Neutral. Hold the clutch pedal to the floor while you are starting the engine. A starter safety device is designed to keep the starter from operating if the clutch pedal is not pushed down all the way.
3. Unlock ignition and start the engine as outlined below for different conditions. Be sure to follow the instructions which apply to your engine. (The Engine Code is the 8th digit on the VIN plate at the lower left side of the windshield. Refer to Specifications in Section 6 for more details.)

NOTICE: Do not crank the engine for more than about 15 seconds at a time. Wait 10 to 15 seconds before trying again. This will help prevent damage to the starter.

GASOLINE ENGINES - THROTTLE BODY INJECTED

Cold/Hot Engine

Do not push down on the accelerator pedal. With your foot off the pedal, crank the engine for 3 seconds. If the engine does not start in 3 seconds, push the accelerator pedal to 1/4 throttle for the remainder of the 15 seconds. If the engine does not start, wait 15 seconds to let the starter motor cool down. Then crank the engine at wide open throttle for a maximum of 10 seconds. If the engine still does not start, wait another 15 seconds and repeat the entire procedure.

Hot Engine Restart (All 5.7L Engines And Vehicles Over 8500 GVWR)

In case of engine stall after start (hot engine), turn the key to the "OFF" position and then back to the "RUN" position and wait 15-20 seconds prior to restart. This allows fresh fuel to be provided for the injection unit.

4. Apply the regular brakes and shift into the proper gear. Release the parking brake and drive off.

GASOLINE ENGINES - CARBURETED

Cold Engine

Push down the accelerator pedal to the floor and slowly release it. With your foot off the pedal, crank the engine by turning the ignition key to "START." Release the key when the engine starts.

If the engine does not start or starts but fails to run, repeat this procedure

NOTICE If the engine runs for a long time (5 minutes or more) without pushing the accelerator pedal down, overheating could cause damage to the engine and exhaust system.

Warm Engine

Do not push down the accelerator pedal. With your foot off the pedal crank the engine by turning the ignition key to START. If the engine does not start after 3 seconds of cranking, push down the accelerator pedal to 1/3 of its travel while cranking. Release key (and accelerator pedal) when the engine starts.

Very Cold Weather (Below -18°C or 0°F) Or After Vehicle Has Been Standing Idle Several Days

Before cranking the engine, fully push down and release the accelerator pedal several times more than stated for your engine under "Cold Engine" starting. Then with your foot off the accelerator pedal, crank the engine by turning the ignition key to START. Release the key when the engine starts.

If Engine Fails to Start After Normal Starting Procedure

1. If you tried the cold engine starting procedure and the engine did not start, then fully push down and release the accelerator pedal several times. Take your foot off the pedal and crank the engine by turning the key to "START."
2. If you tried the warm engine starting procedure (or the cold engine procedure and Step 1 above) and the engine still does not start, push down the accelerator pedal to the floor and hold it there while cranking the engine. This should clear the engine if it is flooded.
3. If the engine has been flooded with too much fuel, it may start to run but not have enough power to keep running. In that case, continue cranking with the accelerator pedal all the way to the floor until the engine clears itself of excess gasoline and runs smoothly. (But do not crank more than 15 seconds at a time or you could damage the starter.)
4. Apply the regular brakes and shift into the proper gear. Release the parking brake and drive off.

GASOLINE ENGINE BLOCK HEATER

The optional gasoline engine block heater is designed to warm the block area for improved cold weather starting. It can also help reduce fuel consumption when a cold engine is warming up. (If you have an optional diesel engine, refer to "Cold Weather Starting" under "Starting the Diesel Engine" in Section 2 for information on the engine block heater.)

To use the block heater

1. Open the hood
2. Unwrap the electrical cord. (After using the block heater, be sure to restow the cord properly to help keep it away from moving engine parts.)
3. Plug the cord into any three-prong, 110-volt outlet (normal household current).

NOTICE: If the cord is too short, use a heavy-duty, three-prong extension cord. Do not use an extension cord such as you would use for a lamp because the cord may overheat.

Outside temperature, oil viscosity, etc., will affect how long the block heater should remain plugged in. Contact your GM dealer for advice for the conditions in your area.

STARTING THE DIESEL ENGINE

The following procedure is recommended for starting your diesel engine. Please note that a diesel engine starts differently from a gasoline engine.

1. Apply the parking brake.
2. **Automatic Transmissions** — Shift the transmission to "P" (Park) or "N" (Neutral). "P" preferred. A starter safety device is designed to keep the starter from operating if the shift lever is in any drive position. (If you need to restart the engine while the vehicle is moving, shift the transmission to "N".)

   Manual Transmissions — Push the clutch pedal to the floor and shift the transmission to "N". Hold the clutch pedal to the floor while you are starting the engine. A starter safety device is designed to keep the starter from operating if the clutch pedal is not pushed down all the way.
3. Turn the ignition key to "RUN". Do not turn it to "START". With the ignition in "RUN", the "GLOW PLUGS" light will come on. This tells you that small heating elements called "glow plugs" are warming part of the engine for improved starting. When the engine is ready to start, the "GLOW PLUGS" light will go out.

   If the engine is warm, the "GLOW PLUGS" light may not come on. This is normal.

   During cranking and/or after starting, the "GLOW PLUGS" light may cycle on and off a few times. This is normal; however, if the light cycles continuously, you should contact your dealer as soon as practical.
4. With the "GLOW PLUGS" light out, if the temperature is more than 0°C (32°F), press down the accelerator pedal halfway and hold it. If the temperature is less than 0°C (32°F), press the accelerator pedal to the floor and hold. Then crank the engine by turning the ignition key to "START". Release the key and accelerator when the engine starts.

Pumping the accelerator pedal before or during cranking will not aid in starting, and could keep the engine from starting.

NOTICE: If the engine does not start after cranking 10 to 15 seconds, release the ignition key. Wait 10 to 15 seconds for the starter to cool, then repeat Step 4. If attempting to start the engine after running out of fuel, refer to the "Notice" under "Fuel Requirements" in this section.

Do NOT use starting "aids" in the air intake system. Such "aids" can cause immediate engine damage.

To restart the engine if you have run out of fuel, refer to "Running Out Of Fuel" under "Diesel Fuel Requirements and Fuel System."

When the engine is cold, let it run for a few seconds before moving the vehicle. This will allow oil pressure to build up. Increased operating noise and light smoke are normal when the engine is cold.

5. Apply the regular brakes and shift into the proper gear. Release the parking brake and drive off.

NOTICE: Do not leave your vehicle unattended with the engine running. If the engine should overheat, you would not be there to react to the "TEMP" warning light or coolant temperature gage. This could result in costly damage to your vehicle and its contents.

While you are waiting for the "GLOW PLUGS" light to go out, fasten your safety belt and ask your passengers to do the same.

COLD WEATHER STARTING (DIESEL ENGINES)

If you plan ahead for cold weather starting and driving, your vehicle should be no problem. The following tips will help assure good starting in cold weather.

Oil gets thicker as it gets colder, which slows down the engine cranking speed. Your diesel engine runs through the heat of compression (and glow plugs when cold), rather than through the use of spark plugs as in a gasoline engine. So, your engine must crank faster than a gasoline engine before it will start.

To be sure the engine can turn fast enough to start, use SAE 10W-30 viscosity engine oil when prevailing temperatures drop below 0°C (32°F). (Refer to the oil quality and oil viscosity recommendations in Section 5.) Using the proper viscosity oil will make starting easier down to -18°C (0°F). When prevailing temperatures drop below -18°C (0°F), the engine block heater may be needed for starting.

If you park your vehicle in a garage, you should not need to use the block heater until the garage temperature drops below -18°C (0°F), regardless of outside temperatures.

The engine block heater is designed to warm the block area, which will let the engine turn faster. To use the block heater:

1. Open the hood.
2. Unwrap the electrical cord located in the engine compartment.

3. Plug the cord into any three-prong 110 volt outlet (normal household current).
4. After using the block heater, be sure to restow the cord properly to help keep it away from moving engine parts.

NOTICE: If the cord is too short, use a heavy-duty, three-prong extension cord. Do not use an extension cord such as you would use for a lamp because the cord may overheat.

Use the block heater as shown in the chart.

ENGINE BLOCK HEATER USAGE*

Viscosity Grade Oil	32° to 0°F (0° to 18°C)	0° to -10°F (-18° to -23°C)	Below -10°F (Below -23°C)
SAE 30	Two Hours	Eight Hours or Overnight	**
SAE 10W-30	Not Required	Two Hours	Eight Hours or Overnight
SAE 15W-40	Not Required	Two Hours	Eight Hours or Overnight

*The times listed are minimum times. It will not harm either the block heater or the vehicle to leave it plugged in longer than the times stated.

**This grade oil is not recommended at these temperatures.

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In cold weather when the vehicle is to be parked for an extended period of time (overnight), the engine block heater may be used to reduce the engine warm-up time and consequently reduce the heater warm-up time.

At temperatures below -7°C (20°F), Number 2-D diesel fuel may clog the fuel filter. This is normally caused by paraffin in the fuel turning into wax as gets colder. If the engine starts but stalls soon after a short time and will not restart, the fuel filter may be clogged. For best results in cold weather use Number 1-D diesel fuel or a winterized Number 2-D fuel. For more information refer to "Diesel Fuel Requirements and Fuel System" in this section.

IF ENGINE FAILS TO START

1. Do not use starting aids, such as ether or gasoline in the air intake. Such aids can cause immediate engine damage.
2. Turn the ignition key to "RUN". Check that the "GLOW PLUGS" light is out before turning the ignition key to "START".
3. If the "GLOW PLUGS" light fails to go out, or comes back on after the engine starts, there may be a system malfunction. If this happens, you can usually still start the engine after waiting a few seconds, but you

should contact your dealer as soon as practical for a starting system check

4. Be sure you have the proper viscosity oil and that you have changed it at the recommended intervals. Using oil of improper viscosity may make starting more difficult.
5. If your batteries do not have enough charge to start the engine, refer to Section 3.
6. If the "GLOW PLUGS" light is out and your batteries are sufficiently charged, but the engine will not start, contact your dealer.
7. If the engine starts, runs a short time, then stops, wax forming in the fuel could be plugging the filter. (This can happen if you use the improper fuel at colder temperatures.) If this happens, contact your dealer. (For more information, refer to "Diesel Fuel Requirements" and "Fuel System" in this section.)
8. If you have run out of fuel, follow the starting pocedure under "Running Out Of Fuel" in this section.

DRIVING THROUGH WATER (DIESEL ENGINES)

NOTICE: Do not drive through standing water more than 8 inches deep if your vehicle has a diesel engine. If you do, or if you drive through standing water faster than 5 mph (10 km/h), water can be sucked into the engine through the air intake. This can result in immediate and extensive engine damage.

OPERATION IN SNOW (DIESEL ENGINES)

Driving in a heavy snow storm, or in dry loose snow that may swirl around the front of the vehicle, will cause snow to be drawn into the air intake system. Continuing to operate your vehicle under these conditions may cause the air cleaner to plug causing excessive black smoke and loss of power. Should the air cleaner become plugged with snow in extreme conditions, the air cleaner element can be removed to allow the vehicle to be driven to a place of safety.

GUARD AGAINST THEFT

Your new vehicle has many features to help prevent theft of the vehicle, its equipment and contents. But these anti-theft features depend upon you to work.

The time to be most on guard is when leaving the vehicle.

1. Park in a lighted spot when you can.
   - Be sure to turn your steering wheel sharply to one side to help prevent towing of this vehicle from the rear.
2. Lock the steering column and take the keys.
   - Turn the key to "LOCK" while pressing the key release lever (if so equipped) and remove the key. This locks the ignition and both steering and shift controls, unless your truck has a floor shift manual transmission. In that case, the shift control is not locked.

- If you must leave a key with the vehicle, leave the square-head key only. Take the oval-head key with you. This will help prevent unwanted entry into your vehicle or any locked compartment at a later date.

3. Keep items that may appear to be of value out of sight and locked up when possible.

4. Fully close all windows and lock all doors.

PARKING

CAUTION: Before the driver leaves this vehicle, to reduce the risk of personal injury as a result of vehicle movement:

1. **Firmly apply the parking brake first. (Refer to "Torque Lock" in this section.)**
2. **Shift the automatic transmission to "P" (Park) or the manual transmission to "R" (Reverse).**
3. **Turn the key to "LOCK". On vehicles with floor-shift manual transmissions, depress the key release lever and turn the key to "LOCK".**
4. **Remove the key (the buzzer is designed to remind you).**
5. **Be sure the vehicle is not moving before you leave the driver's seat.**

To reduce the chance of personal injury and/or vehicle damage due to engine overheating, never leave the engine idling without an alert driver present. If the engine should overheat, as indicated by the Engine Coolant Temperature Light or gage, immediate action is required to correct the condition. Continued operation of the engine, even for a short time, may result in a fire.

VEHICLE OPERATION

NOTICE: It is not recommended that this vehicle be parked, or idled or operated over combustible materials such as grass or leaves. They could touch the hot exhaust system and start a fire. This is particularly important if the exhaust system has not been properly maintained. Combustible materials could catch fire from hot exhaust gases, soot, or sparks that could escape through corrosion holes or cracks.

(Continued)

NOTICE (Continued)

If operating, parking or idling your vehicle off-road is unavoidable, such as in farming, lumbering, or commercial or recreational use:

- **The driver should be aware that combustible materials could catch fire from the vehicle's hot exhaust system.**
- **Carry a fire extinguisher with the vehicle at these times.**
- **Avoid driving your vehicle through or over combustible materials such as leaves, grass, vegetation or stubble high enough to touch, catch or collect on its hot exhaust system.**
- **Parking or idling should be done only in an area where there are no combustible materials under the vehicle.**

Failure to follow these instructions could damage your vehicle or nearby property.

TRANSMISSION

DESCENDING A GRADE

CAUTION: To reduce the risk of personal injury, before going down a steep or long grade, reduce speed and shift the automatic transmission to low or manual transmission to next lower gear. Do not hold the brake pedal down too long or too often while going downhill. This could cause the brakes to get hot and not work as well. As a result, the vehicle will not slow down at the usual rate. Failure to take these steps could result in loss of vehicle control.

AUTOMATIC TRANSMISSIONS

Your vehicle may have an optional automatic transmission. After starting the engine with the selector lever in "P" (Park) or "N" (Neutral) position, select the range desired (see table) and press the accelerator. A gradual start with a steady increase in accelerator pressure will result in best possible fuel economy. Rapid acceleration for fast starts will result in greater fuel consumption.

Automatic transmission shift quadrants of all GM vehicles continue the uniform sequence of selector positions. Shift indicators are arranged with "P" position at one end, followed in sequence by "R" (Reverse), "N" and the forward driving ranges. All automatic transmissions are equipped with a starter safety switch designed to permit starting the engine only when the transmission selector is in the "P" or "N" position. For additional engine braking effect as sometimes needed in mountainous driving, place the transmission in a low range.

3-SPEED AUTOMATIC TRANSMISSION SHIFT INDICATOR POSITIONS

P (PARK)	This position is used to lock the transmission when the vehicle is parked or while starting the engine. Never move the shift lever to Park until your vehicle is fully stopped. Use this position together with the parking brake.
R (REVERSE)	This position is used for backing the vehicle. Bring your vehicle to a complete stop before shifting to Reverse.
N (NEUTRAL)	This is the out of gear position. You may restart a stalled engine while the vehicle is still moving with the selector in Neutral. This position is also used when towing the vehicle. Refer to "In Case of Emergency" section for towing facts.
D (DRIVE)	Use this position for all normal forward driving. For full downshifts, with the selector in "D" you can get an automatic downshift at speeds under 35 mph (60 km/h) by pressing the accelerator approximately halfway to the floor. You will also get a forced downshift at speeds above 35 mph (60 km/h) by pressing the pedal all the way to the floor. This will give you increased acceleration for passing maneuvers.
2 (LOW 2)	This range is used when a lower gear is desired for hill climbing or it can be used to provide engine braking to slow the vehicle when going down medium grades. The shift lever may be moved from D to 2 (and vice versa) under most driving conditions.
1 (LOW 1)	This position is used to provide maximum engine braking when driving down very sharp grades or when first gear is desired to climb a steep hill or run through deep snow or mud. You may shift into "1" at any speed but the transmission will not shift into first gear until vehicle speed is under 40 mph (65 km/h).

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4-SPEED AUTOMATIC OVERDRIVE TRANSMISSION SHIFT INDICATOR POSITIONS

P (PARK)	This position is used to lock the transmission when the vehicle is parked or while starting the engine. Never move the shift lever to Park until your vehicle is fully stopped. Use this position together with the parking brake.
R (REVERSE)	This position is used for backing the vehicle. Bring your vehicle to a complete stop before shifting to Reverse.
N (NEUTRAL)	This is the out of gear position. You may restart a started engine while the vehicle is still moving with the selector in Neutral. This position is also used when towing the vehicle. Refer to "In Case of Emergency" section for towing facts.
D (OVERDRIVE)	This is the overdrive gear range position used for most normal driving. This position lets the transmission choose the appropriate gear for load driving conditions. Also the transmission is designed to shift automatically into Overdrive (from Drive) when the vehicle reaches a steady cruising speed of about 40 mph (65 kmh), or faster.
D (THIRD GEAR)*	On vehicles with the overdrive transmission, "D" is the same as "D" on vehicles without an overdrive feature and should be used when increased performance is needed, such as on hilly roads or when towing a trailer. It prevents the transmission from shifting into Overdrive. It also provides more engine braking than D range. You should shift to "D" range when driving on slippery surfaces to help avoid unexpected downshifts (out of Overdrive) which may occur on slippery surfaces. Refer to "Driving on Slippery Surfaces" in this section. You should also shift to "D" if you notice what feels like excessive shifting between ranges. This could be caused by overengaging and disengaging of the overdrive or of the torque converter clutch. This is normal under certain driving conditions. Shifting from D to "D" should bring improvement. (When driving conditions change, shift back to D for improved fuel economy.)

*If you need more power for passing, you can [illegible] the transmission to downshift by fully pressing the accelerator pedal.

F-05916

4-SPEED AUTOMATIC OVERDRIVE TRANSMISSION SHIFT INDICATOR POSITIONS (CONT.)

2 (SECOND GEAR)	This range is used when a lower gear is desired for hill climbing or it can be used to provide "engine braking" to slow the vehicle when going down medium grades. The shift lever may be moved from "D" to "2" (and vice versa) under most driving conditions.
1 (FIRST GEAR)	This position is used to provide maximum engine braking when driving down very sharp grades or when first gear is desired to climb a steep hill or run through deep snow or mud. You may shift to "1" at any speed but the transmission will not shift into first gear until the vehicle speed is under 40 mph (65 km/h).

F-05912

NOTICE: The following practices could result in automatic transmission failure:

- **Shifting between forward and reverse driving ranges while operating the engine at high speed or heavy throttle, such as when the driving wheels are on snow or ice — commonly called "rocking." (Refer to the correct method for "rocking" a vehicle under "Freeing Vehicle from Sand, Mud, Snow or Ice" in Section 3.)**
- **Shifting to "R" (Reverse) or any forward range while operating the engine at high speed in "N" (Neutral) or "P" (Park).**
- **Shifting to "P" (Park) while the vehicle wheels are still turning.**
- **Operating the transmission at or near "stall condition" for more than 10 seconds at a time. "Stall condition" is when the engine runs at high speed with the transmission in a forward or reverse driving range and drive wheels are not moving. As example, when the wheels are stuck in deep sand or mud or when the vehicle is against a fixed barrier.**
- **Holding vehicle on an upgrade by increasing engine speed with the accelerator pedal. (Use the regular brakes to hold vehicle on an uphill grade.)**

If this vehicle has an overdrive transmission the gear range indicator will have a [D]. Overdrive transmissions have two drive ranges. Refer to chart "Automatic Overdrive Transmission — 4-Speed" in this section.

Your automatic transmission may have either a clutch-type torque converter or an open-type torque converter. Both offer the quality performance associated with General Motors products.

If so equipped, the converter clutch is designed to automatically engage when the vehicle reaches a steady speed of about 25 mph (40 km/h) or higher depending on the particular model. When engaged, the clutch provides a direct mechanical connection between the engine and the drive wheels. This direct connection produces more efficient operation of the transmission and thereby contributes to improved fuel economy.

With the clutch-type converter, you may notice what feels like a transmission shift when the clutch engages or disengages. Also, on occasion, you may feel certain incidental engine pulsations in the 25 to 50 mph (40 to 80 km/h) range. This feel is similar to that sometimes experienced in a manual transmission equipped vehicle.

These conditions are normal. They have no adverse effect on your vehicle and do not indicate the need for repairs.

MANUAL TRANSMISSION

For the best compromise between vehicle performance and fuel economy, upshift the transmission as recommended in the following chart.

Shift at the highest vehicle speed listed unless you have reached cruising speed. (Cruising speed is a relatively steady speed which includes slight variations in speed to allow for road and traffice conditions.) For cruise, use the highest gear for that speed.

If vehicle speed drops below 20 mph (30 km/h), or if the engine is not running smoothly, you should downshift to the next lowest gear. You may need to downshift two or more gears to keep the engine running smoothly or for satisfactory performance.

Manual Transmission Recommended Shift Speed in MPH (km/h)

Engine and Transmissions	Acceleration Shift Speeds		
	1 to 2	2 to 3	3 to 4
4.3 L (V6) Engine Code Z 5.0 L (V8) Engine Code H 4 Speed (1)	15 (24)	40 (64)	50 80)
5.7 L (V8) Engine Code C 4 Speed (1)	15 (24)	40 (64	45 72)
Engine and Transmissions	**Cruise Shift Speed**		
	1-2	2-3	3-4
4.3 L (V6) Engine Code Z 5.0 L (V8) Engine Code H 4 Speed (1)		25-40 40-64)	45-50 72-80)
5.7 L (V8) Engine Code C 4 Speed (1)		[illegible] (40-64)	

(1) 4 Speed manual with overdrive [illegible] gear

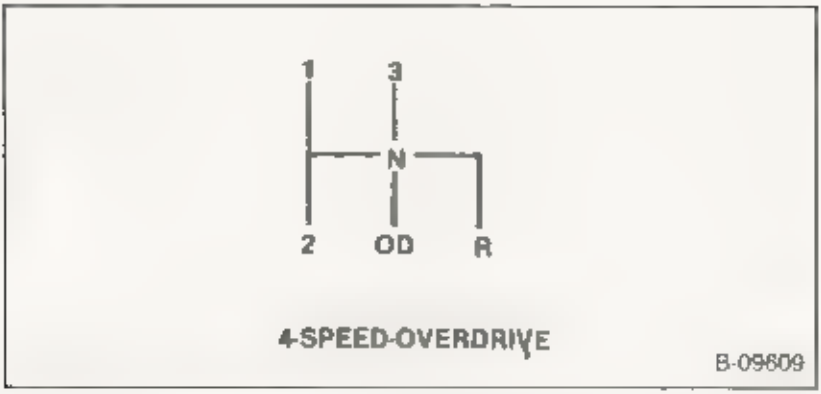
F-05170

CLUTCH PEDAL

On models equipped with a manual transmission a clutch pedal is used to engage or disengage the clutch thereby connecting or disconnecting the engine from the transmission and driveline to rear wheels. When the pedal is fully extended the clutch is engaged driving the transmission and the rear wheels.

DRIVING PRECAUTIONS

- When stopped on an upgrade do not hold vehicle with engine use parking or regular brakes.
- Shift to next lowest gear for extremely hard pulls at low road speed.
- Shift the gears with a moderate effort to allow time for the transmission synchronizers to coordinate.
- Do not ride clutch pedal this produces a partly disengaged condition that will result in damage to your clutch.
- Downshift one or two gears from high gear when driving at slow speeds (less than 30 mph or 50 km/h) in stop-and-go traffic for improved vehicle performance during acceleration and when descending steep grades.
- Do not coast in Neutral (illegal in many states).
- Set parking brake firmly before leaving vehicle.



4-SPEED-OVERDRIVE

B-09609

FOUR SPEED — OVERDRIVE

This transmission has an overdrive fourth gear for greater fuel economy at highway speeds.

BRAKING AND STEERING TECHNIQUE

To get maximum braking while maintaining vehicle control, use a squeeze braking technique. Do this by pushing on the brake pedal with steadily increasing pressure. If possible, steer around obstacles when there is not enough room to stop. If the vehicle does not respond to steering or changes direction when you are not steering, ease up on the brake pedal. If the front wheels are not rolling to some extent, you cannot control the direction of the vehicle by turning the steering wheel. To correct for a skid, ease off the gas pedal or the brake and steer to keep the vehicle pointing where you want it to go. Don't touch the brake.

Driving On Slippery Surfaces

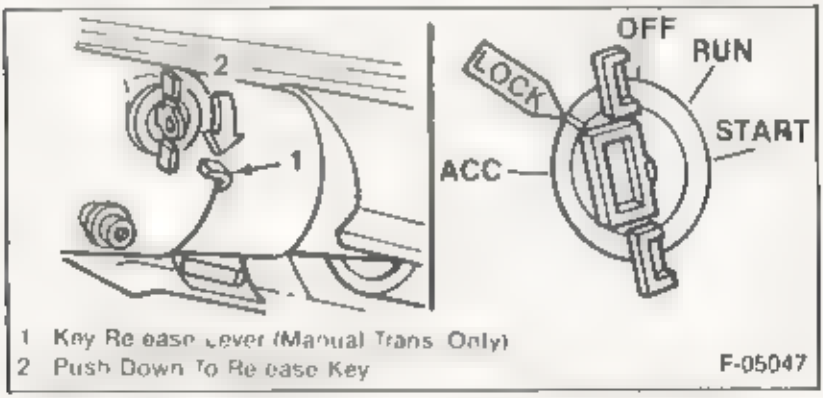
Drive, steering and braking traction are reduced when water, snow, ice, gravel or other material is on the road. Slow down and adjust your driving to such conditions. It is important to slow down when it is slippery because stopping distances will be longer and vehicle control more limited. While driving on a surface with reduced traction, avoid maneuvers involving sudden steering, acceleration or braking (including engine braking due to shifting to a lower gear), which could cause the tires to skid. You may not realize the surface is slippery until the vehicle is skidding. Learn to recognize warning clues — such as enough water or ice on the road to make a mirrored surface — and slow down when there is any doubt. Also refer to "Traction" under Tires in Section 5.

SECTION 2A
STEERING COLUMN CONTROLS

ANTI THEFT STEERING COLUMN LOCK

CAUTION: On vehicles with floor-shift manual transmissions, if you need to turn off the engine while the vehicle is moving, turn the key only to "OFF." Do not press the key release lever. Turning the key to "LOCK" will lock the steering column and result in loss of ability to steer this vehicle.

The anti-theft lock (ignition) on the right side of the steering column has five positions.



1 Key Release Lever (Manual Trans. Only)
2 Push Down To Release Key

F-05047

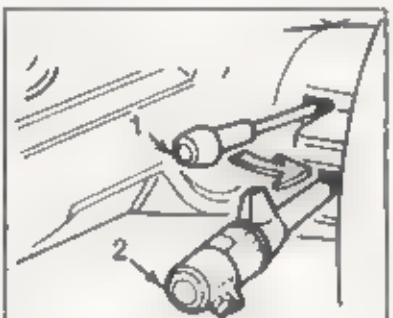
- ACC (Accessory) - You can use some electrical accessories when the engine is not running. To engage this position, push in the square-head key and turn the top of the key toward you.
- "LOCK" - Normal parking position. It locks the ignition and prevents normal use of the steering wheel and shift controls. The ignition key cannot be turned to "LOCK" and removed until the shift lever is moved to "P" (Park) on automatic transmission models (shift to "R" (Reverse) on manual transmission models). If you have a 4-speed manual transmission, "LOCK" prevents normal use of the steering wheel. The ignition key cannot be turned to "LOCK" without pressing down the key release lever.
- OFF - You can turn off the engine without locking the steering wheel and shift controls.
- RUN - Normal operating position. (On diesel engine vehicles, "RUN" turns on the glow plugs. Also, refer to "Starting the Diesel Engine" in Section 2.)
- "START" - Cranks the engine.

To unlock the ignition, first be sure the key is pushed in all the way. Then, rotate the steering wheel to the right or left while you turn the key. At the same time, turn the ignition key with as much effort as you can apply with your hand. Do not try to use a tool of any kind to apply more force on the lock knob, as this could break the knob.

POWER STEERING

If the power steering assist system goes out because the engine has stopped or the assist system has malfunctioned, the vehicle can still be steered. However, much greater effort is needed, especially in sharp turns or at low speeds.

TILT STEERING WHEEL



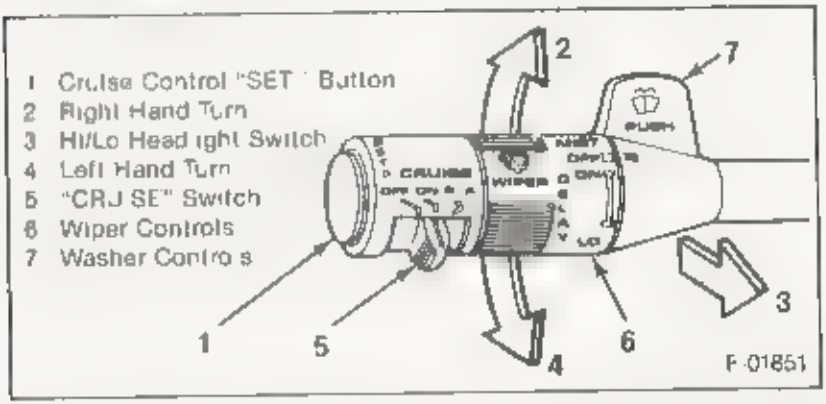
1. Tilt Control Lever
2. Turn Signal Lever F-01218

The optional tilt steering wheel can be tilted up above normal position to provide additional room for entrance and exit as well as selected driving positions below normal height. The tilt control lever is located on the left side of the steering column just behind the turn signal lever. To operate, pull the lever towards you and move the steering wheel to your desired position, then release the lever. This permits individual selection of the most comfortable positions for all driving conditions. On longer trips the steering wheel position may be changed to help minimize tension and fatigue.

HAZARD WARNING FLASHER

The hazard warning flasher is covered in Section 3.

TURN SIGNAL AND MULTI-FUNCTION LEVER



The turn signal lever on the left side of the steering column also controls headlight low-beam and high-beam, the windshield wiper/washer and the optional Cruise Control (refer to Cruise Control operation in this section).

TURN SIGNAL

Move the lever up to the second stop to signal a right turn. Move it down to the second stop to signal a left turn. When the turn is completed, the signal will cancel and the lever will return to horizontal.

LANE CHANGE SIGNAL

In some turns, such as changing lanes, the steering wheel is not turned far enough to cancel the turn signal. For convenience, you can flash the turn signal by moving the lever part way (to the first stop) and holding it there. The lever will return to horizontal when you release it.

A green light on the instrument panel is designed to flash to tell you that the front and rear signal lights are working. If the light stays on but does not flash, check for a burned-out signal bulb. If the green light does not come on when you move the lever, check the fuse and indicator bulb.

However, if you ordered a trailer towing option in which extra wiring was added to attach the trailer lighting, a different type of flasher was installed. In this case, the green light will continue to flash even if a turn signal bulb burns out. Therefore, you must regularly look at the front and rear turn signal lights to be sure they are working.

HEADLIGHT BEAM CHANGER

With the headlights on, pull the lever toward you until you hear a click, then release it. The lights will change from low-beam to high beam or from high-beam to low-beam. When the high-beams are on, a light will appear on the instrument panel. Refer to "Headlight Highbeam Indicator Light" in Section 2C.

STANDARD WINDSHIELD WIPER

The standard windshield wiper system controls are on the band marked "WIPER" on the turn signal lever.

- For a manual wiping control ("MIST" position), turn the band toward

you. Hold it there until the wipers begin wiping, then release it. The wipers will stop after one cycle. For several cycles, hold the band in place as long as needed.
- For steady wiping at low speed, turn the band away from you to the first stop. For high-speed wiping, turn the band to the next stop. Turn the band back to "OFF" to turn off the wipers.

DELAY WINDSHIELD WIPER

The optional delay windshield wiper system lets you vary the wiper speed from a 16-second delay between sweeps up to the normal low and high speeds of the standard wiper.

- The Delay wipers work the same as the standard wipers, except for the delay feature. To use the wipers with a delay between sweeps, turn the band on the turn signal lever to "ON."
- Turn the "DELAY" band away from you to control the amount of delay. The wipers will move more often the closer the band is to "LO." Turn it fully to the first stop for steady wiping at low speed.

WINDSHIELD WASHER

To spray washer fluid on the windshield, push the "paddle" on top of the turn signal lever. (This will also turn on the low-speed wipers.) The spray will continue as long as you hold in the paddle.

After using the windshield washer on the standard wiper system, turn the band back to "OFF" to turn off wipers.

With the Delay wiper system, the wipers will stop (or return to the action for which they were set) after completing the wash cycle.

OPERATING TIPS — WASHERS AND WIPERS

- Clear ice or packed snow from the wiper blades before using the wipers. Carefully loosen or thaw wipers that are frozen to the windshield.
- Check the washer fluid level regularly. Do it often when the weather is bad.
- Use a fluid such as GM Optikleen to help prevent freezing damage and for better cleaning. Be sure to add the fluid to the proper reservoir.
- Fill the washer fluid reservoir only 3/4 full during the winter to allow for expansion if the temperature should fall low enough to freeze the solution.
- Do not use radiator antifreeze in the windshield washer. It could cause paint damage and cloud the glass.
- In cold weather, warm the windshield with the defroster before using the washer to help prevent icing that may block the driver's vision.
- Periodically clean the wiper blades with a 50/50 mixture of GM Optikleen and water. Refer to Section 4.

CRUISE CONTROL WITH "RESUME/ACCEL" FEATURE

Cruise Control is an optional speed control system. The system allows the vehicle to keep a constant forward speed during most normal driving without keeping your foot on the accelerator pedal, thus increasing driver comfort on long trips. The system can hold a speed of above 25 mph (40 km/h) or higher within the limits of your engine.

The system is capable of resuming a preset cruising speed after

- braking
- clutching with manual transmission vehicles (without using the accelerator pedal)
- accelerating from a given set speed to a higher speed

The system also allows the driver to "tap-up" and increase speed or "tap-down" to decrease vehicle speed in increments of about 1 mph (1.6 km/h) when needed. This feature is useful when traffic conditions warrant a small adjustment in speed.

The controls are part of the turn signal lever. The "CRUISE" switch must be moved to "ON" before the system will work. The "SET" (Set/Coast) button is on the end of the turn signal lever.

To Engage Cruise Control

Accelerate to the desired speed, push in the "SET" button all the way and release it. Take your foot off the accelerator pedal and the set speed will be maintained up or down hills. The Cruise Control will disengage when you apply the brakes, or use the clutch on manual transmission vehicles. It will also disengage by moving the "CRUISE" switch to "OFF" or by turning the ignition to "OFF". To disengage the system without coming to a complete stop, push the brake pedal or clutch lightly — use just enough force to disengage the system without stopping the vehicle.

To Change Cruising Speed

To reset the Cruise Control to a faster speed, accelerate to the speed you wish. Push in the "SET" button all the way and hold for about one second, then release it.

Or, push the "CRUISE" switch to "R/A" to accelerate and reset to the speed you wish. The "CRUISE" switch must be held to "R/A" for more than one second in order to engage the "Accel" mode. Speed may also be increased by tapping the "CRUISE" switch (to "R/A") for less than one second while cruising. The set speed will be increased by about 1 mph (1.6 km/h) for every tap. Tap-ups are limited to 10 mph (16 km/h) above vehicle speed.

To reset to a slower speed, push in the "SET" button all the way and hold it there. Wait until the vehicle slows to the desired speed, then release the button. Speed may also be decreased by tapping the "SET" button for less than a second while cruising, and the memory speed will be decreased about 1 mph (1.6 km/h) for every tap. Tap-downs are limited to a minimum cruising speed of 25 mph (40 km/h).

To "Resume/Accel"

After braking or stopping the vehicle without turning off the ignition, you can resume to your last set cruising speed by accelerating to 25 mph (40 km/h) or more and sliding the "CRUISE" switch momentarily to "R/A". When you release the "CRUISE" switch, your vehicle will accelerate to the cruise speed set before braking or stopping.

Sliding the "CRUISE" switch to "R/A" and holding the switch no longer than one second will accelerate the vehicle until the switch is released. The speed at which the switch is released will become the new cruising speed.

To Disengage

D sengage the Cruise Control by pushing the brake peda , or the clutch pedal on manua transmission vehicles You can also turn off the system by moving the 'CRUISE' switch to 'OFF' Holding in the 'SET' button until vehicle speed falls below 25 mph (40 km/h) will also disengage the system.

To Pass A Vehicle

Use the accelerator pedal for more speed when pass ng. When you take your foot off the pedal the vehicle wi slow down to the speed set before passing

NOTICE To help keep the vehicle under control, do not use the Cruise Control and particularly its RESUME/ACCEL feature under the following conditions.

- **When the previously set speed is faster than the existing traffic flow**
- **When it is not possible to keep the vehicle at a set speed**
- **On slippery roads such as those covered with snow and ice**
- **On winding roads in heavy or varying traffic volume, or in traffic that varies in speed**

After accelerating to the desired speed and engaging the Cruise Control the vehicle will hold a set speed and will not slow down when you take your foot off the accelerator pedal. To slow the vehicle, follow the instructions under To Disengage.

When going up or down hills it is possible for the vehicle to lose or to gain speed (particularly when towing a trailer), even though the Cruise Control is engaged If this happens when going uphill, merely press the accelerator pedal to maintain the speed desired. If going down a hill steep enough to cause the vehicle to gain speed, press the brake pedal — which will both disengage the Cruise Control and help slow the vehicle In addition, when going down a steep or long grade, the transmision should be shifted into a lower gear to help control vehicle speed — refer to 'Descending A Grade in Section 2

HORN

The horn on your vehicle is actuated by firmly pressing on the pad in the center of the steering wheel

SECTION 2B
BRAKE SYSTEM

The regular braking system is designed for braking performance under a wide range of driving conditions even when the vehicle is loaded to its full-rated vehicle load capacity

BRAKE WARNING LIGHT

The brake system warning light is covered in the Instrument Panel section.

RIDING THE BRAKE

NOTICE: Riding the brake by resting your foot on the pedal when you do not intend to brake can overheat the brakes and wear out the brake linings faster. This may also damage the brakes and will waste fuel.

WET BRAKES

CAUTION: After driving through water deep enough to wet brake components or having the vehicle washed, the brakes may require higher pedal effort. As a result, the vehicle will not slow down at the usual rate and it may pull to the right or left. After checking to the rear for other vehicles, apply the brakes lightly to check whether this has happened. To dry them quickly, lightly apply the brakes. At the same time keep a safe forward speed, with plenty of clear space ahead, to the rear, and to the sides. Do this until the brakes return to normal. Always do this after driving through water or having your vehicle washed, to help reduce the risk of personal injury.

VACUUM POWER BRAKES

If the engine stops, do not pump the brakes. The system is designed to stop the vehicle with reserve power assist if the brake pedal is held down. This reserve is greatly reduced each time you apply and release the brakes. If, when you turn the steering wheel during braking, the vehicle does not turn, don't push as hard on the brake pedal.

Without power assist the vehicle can still be stopped by pushing much harder on the brake pedal, however the stopping distance may be longer.

HYDRAULIC POWER BRAKES

If you lose power steering assist (such as when the engine stops), do not pump the brakes. The system is designed to stop the vehicle with reserve power assist if the brake pedal is held down. This reserve is used up after one brake application.

Without power assist the vehicle can still be stopped by pushing much harder on the brake pedal, however the stopping distance may be longer. If when you turn the steering wheel during braking, the vehicle does not turn don't push as hard on the brake pedal.

BRAKES (EXCEPT PARKING BRAKE)

If the brake pedal goes down farther than normal, it may be due to a lack of adjustment of any rear drum brakes. To find out if this is the case, drive backward and forward a few times, applying the brakes firmly when going in each direction. Also refer to "Brake Pedal Travel" in this section.

See your dealer if pedal height does not return to normal, or there is a rapid increase in pedal travel whether or not your vehicle has rear drum brakes. This could be a sign of brake trouble.

TORQUE LOCK

The parking brake should be set first whenever leaving the driver's seat. If the vehicle is parked on a grade and the transmission selector lever is placed in "P" (Park) before the parking brake is set, the weight of the vehicle may exert so much force on the parking pawl in the transmission that it may be difficult to pull selector lever out of "P". This condition is called "torque lock". To prevent this, the parking brake should be applied before moving the selector lever to "P".

When preparing to move the vehicle, the selector lever should be moved out of the "P" position before releasing the parking brake. It is good driving practice to set the parking brake first, then release the transmission from "P" even on level surfaces.

If "torque lock" does occur, it may be necessary to have another vehicle nudge this vehicle uphill to take some of the pressure off the transmission while the driver pulls on the transmission selector lever.

BRAKE PEDAL TRAVEL

If your vehicle has a Hydro-Boost Brake System, brake pedal travel is slightly different from brake pedal travel on other vehicles. The vehicle may be brought to a full stop by applying normal force to the brake pedal. Although there is no need to push the pedal beyond the point where it stops or holds the vehicle, by applying more force the pedal will travel some additional distance. A slight hissing sound may be heard when this happens. This extra brake pedal travel and hissing sound are normal.

DISC BRAKE WEAR INDICATORS

Front disc brake pads have built-in wear indicators which should make a high pitched squealing or cricket-like warning sound when the brake pads are worn to where new pads are needed. The sound will come and go, or be heard a little bit of the time when the vehicle is moving but will stop when the brake pedal is pushed down firmly. Expensive rotor damage can result if pads are not replaced when needed.

Also, refer to the brake checks listed in the Maintenance Schedule booklet.

HEIGHT-SENSING BRAKE PROPORTIONING VALVE

The height sensing brake proportion ng valve, used on 30/35 series models, provides opt mum brake balance and efficiency Vehicle braking force is distr b ted to the front and rear wheels as defined by ight or heavy payload cond tions

Mou ted on he frame, the valve responds to changes n vehicle trim height as re ated to rear axle load Mechanical linkage connects the valve to a brac ket that s attached to the rear axle

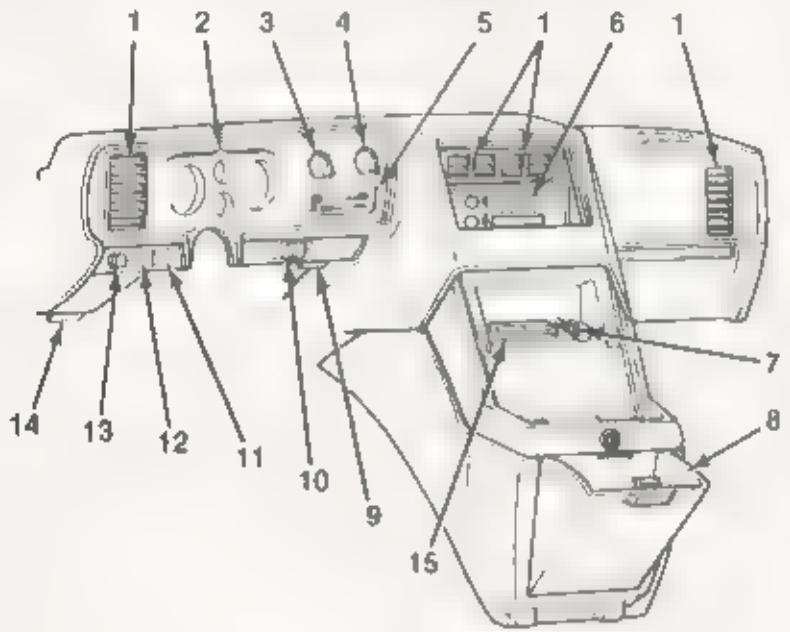
Adding any suspension accessories or other equipment (such as load level ng kits, air shocks suspension lift kits, additional spring leafs, etc), or making any modification that will change the distance between the axle and he frame without changing the load will provide a false read ng to the brake proportion ng valve This cou d result n less than optimum brake performance under some circumstances.

PARKING BRAKE

The parking brake foot pedal is located at the driver s far left side

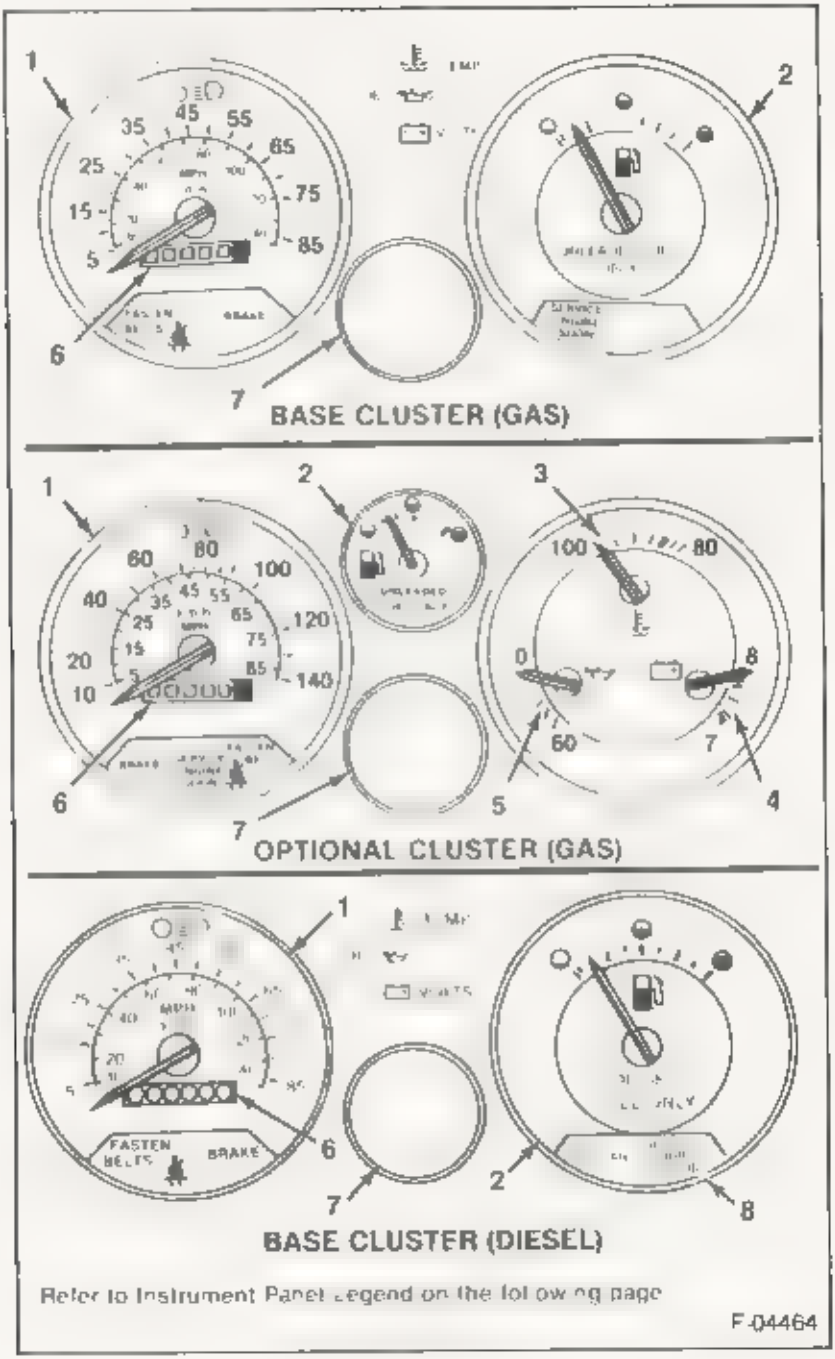
- To set the parking brake hold the regular brake pedal down while setting the park ng brake with your other foot Before you eave the dr ver's seat follow the steps under ' Parking n Section 2
- To release the park ng brake hold the regular brake peda down while pulling the 'BRAKE RELEASE handle (at the lower eft side of he nstrument panel) The brake system warning ght is designed to remind you i the parking brake control is not fully released when the ign tion is on Never drive the vehicle with the parking brake set as t s w reduce rear brake effectiveness due to overheat ng shorten brake life and may cause permanent damage i the parking brake does not hold he vehicle securely or does not fully release see your dealer

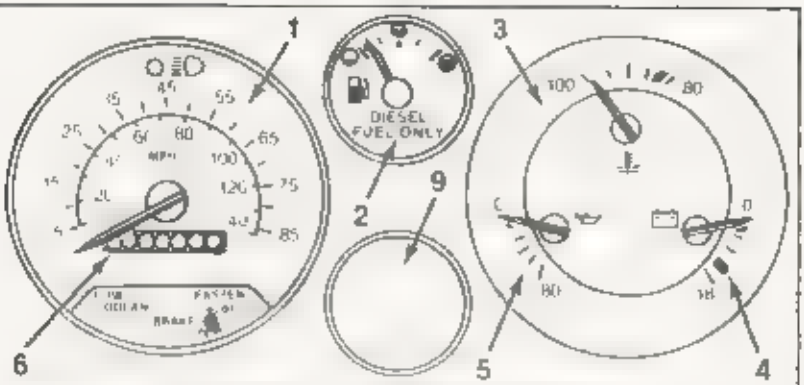
SECTION 2C
INSTRUMENT PANEL AND CONTROLS



1 Vents
2 Instrument Cluster
3 Rear Heater Switch (Optional)
4 Rear Air Conditioning Switch (Optional)
5 Heater/Air Conditioner Controls
6 Radio
7 Cigarette Lighter
8 Storage Compartment
9 Hood Release Handle
10 Dome Lamp Switch (Optional)
11 WATER IN FUEL Light (Diesel Only)
12 "GLOW PLUGS" Light (Diesel Only)
13 Light Switch
14 Brake Release Handle
15 Ashtray

F-05046


1
2
6
7
BASE CLUSTER (GAS)
1
2
3
6
7
5
4
OPTIONAL CLUSTER (GAS)
1
6
7
2
8
BASE CLUSTER (DIESEL)
Refer to Instrument Panel Legend on the following page
F-04464



OPTIONAL CLUSTER (DIESEL)

INSTRUMENT PANEL LEGEND

INDICATOR LIGHTS

- Engine Coolant Temperature ("TEMP")
- Engine Oil Pressure ("OIL")
- Charging System ("VOLTS")
- FASTEN BELTS
- High Beams
- Turn Signal
- BRAKE — Brake System
- LOW COOLANT — Low Coolant Level
- Service Engine Soon
- CHECK ENGINE — Check Engine
- WATER IN FUEL — Water In Fuel
- GLOW PLUGS — Glow Plugs

GAGES/INDICATORS

1. Speedometer
2. Fuel
3. Engine Coolant Temperature Gage
4. Voltmeter
5. Engine Oil Pressure Gage
6. Odometer
7. Clock (Optional)
8. Only for LH6 Diesel Engine
9. Optional Clock or Service Engine Soon Light for LH6 Diesel Engine

* Only one of these symbols will be used on your cluster

F-05044

The instruments, gages and indicators lights conveniently grouped in the instrument cluster will tell you at a glance many important things about the performance of your vehicle. The following information will enable you to more quickly understand and properly interpret these instruments.

INDICATOR AND WARNING LIGHTS

OIL INDICATOR LIGHT

This light will come on to provide a "bulb check," when the ignition is turned on, but should go out after the engine is started. If light fails to come on with the ignition turned on, it could indicate a burned-out bulb, or a blown instrument lamp fuse. Have system repaired if light does not come on during check.

Occasionally, this light may flicker momentarily while the engine is running. Should this occur, check engine oil level as outlined in Section 5 "Checking Oil Level." If the light comes on continuously, pull over to a safe place and stop the engine until the source of trouble can be located and corrected. The source of the trouble could be any of the following.

- Loss of engine oil pressure (check engine oil level).
- Blown instrument lamp fuse.

NOTICE: Continuing to run the engine with an illuminated oil light can cause serious engine damage.

ENGINE COOLANT TEMPERATURE LIGHT

This light is located in the instrument cluster and should come on to warn the driver that the engine coolant has overheated and immediate action is required to correct the condition. As a check that the bulb and its circuit are working, the light will come on during engine starting. If the light does not come on during this check, have it repaired promptly. If the light comes on at any other time, refer to "Engine Cooling System Overheating" in Section 3.

The coolant temperature will vary with air temperature and operating conditions. The ignition (engine control switch) must be on for accurate readings. Make a practice of scanning your gages while driving, especially in hot weather and when the vehicle is under heavy load.

CAUTION: If the Engine Coolant Temperature Light or Gage shows an overheat condition or you have other reason to suspect the engine may be overheating, continued operation of the engine (other than explained in Section 3) even for a short time may result in a fire and the risk of personal injury and severe vehicle damage. Take immediate action as outlined under "Engine Cooling System Overheating" in Section 3.

CHARGING SYSTEM LIGHT

This light is designed to come on when the ignition key is in the 'RUN' position but before the engine is started. After the engine starts, the light should go out and remain out. If the light remains on when engine is running, have your dealer locate and correct the trouble as soon as possible.

"SERVICE ENGINE SOON" OR "CHECK ENGINE" LIGHT

Vehicles with the Computer Command Control system include a "SERVICE ENGINE SOON" light. Gasoline engine vehicles with heavy duty emissions have an Air Injection Reaction system with a "CHECK ENGINE" light.

The "SERVICE ENGINE SOON" ("CHECK ENGINE") light on the instrument panel will indicate the need for system service. It will come on during engine starting to let you know the bulb is working. (The light will stay on a short time after the engine starts.) Have the system repaired if this light does not come on during engine starting.

If the light comes on either intermittently or continuously while driving, service to the system is required. Although in most cases the vehicle is drivable and does not require towing, see your GM dealer as soon as possible for service for the system.

Continued driving without having the system serviced could cause damage to the emission control system.

Refer to "A.I.R. System (Vehicles With Heavy Duty Emissions)" and "Computer Command Control System" in Section 5.

To determine whether your vehicle is a light duty or heavy duty emissions vehicle, refer to "Engine Identification" in Section 6.

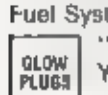
"LOW COOLANT" WARNING LIGHT

This light is included in the instrument cluster of any truck having a diesel engine. The light is designed to come on during engine starting to serve as a bulb check. Once the engine starts, however, the light should go out.

If the light does not go out, or if it comes on while driving, have the radiator coolant level checked. (Refer to Caution under "Engine Cooling System" in Section 3 of this manual.)

"WATER IN FUEL" LIGHT

Vehicles with diesel engines have a "WATER IN FUEL" light to warn of excessive water in the fuel system or plugged fuel filter. This light is located between the steering column and the headlight switch. For details of how this light works, refer to "Diesel Fuel Requirements and Fuel System" in Section 2.



"GLOW PLUGS" LIGHT

Your diesel engine has a special starting system. An instrument panel ("GLOW PLUGS") light tells you when the engine is ready to be started. This light is located between the steering column and the headlight switch. For details, refer to "Starting the Diesel Engine" in this section.

BRAKE SYSTEM WARNING LIGHT*

On vehicles with hydraulic brakes, the regular braking system is a split system designed so that one part will provide some braking if there is a loss of hydraulic pressure in the other part of the system. The system has a brake warning light located in the instrument panel.

For bulb check, the brake light should come on briefly when the key is turned to "ON" and the engine is not running. To serve as a reminder, the light should stay on when the parking brake is not fully released and the ignition is on. Have the system repaired if the light does not come on when it should. This warning light does not do away with the need for brake inspection and maintenance. The brake fluid level must be checked regularly. Refer to your Maintenance Schedule booklet for other brake checks.

If the light remains on after engine start up or comes on during operation of the vehicle, it may mean that there is something wrong with part of the brake system.

What to do:

1. Check to see that the parking brake has been released. If it has been
2. Pull off the road and stop carefully. Remember that:
   - Stopping distances may be longer.
   - You may have to push harder on the pedal.
   - The pedal may go down farther than normal.
3. Have vehicle towed to dealer for repair.

Continued driving without necessary repairs could be dangerous.

*Only one of these symbols will be used on your cluster.

INSTRUMENTS AND GAGES

SPEEDOMETER

The speedometer hand indicates vehicle speed in miles per hour and kilometers per hour.

TAMPER-RESISTANT ODOMETER

The group of figures in the speedometer lower center section indicates the accumulated mileage in miles (or kilometers).

Federal law prohibits tampering with vehicle odometers to alter accumulated mileage. For your protection, the odometer of this vehicle is designed with tamper-resistant features to indicate tampering. If silver lines appear vertically between odometer numerals, it is likely that the odometer has been turned back or reversed. The mileage shown may not be actual.

Whenever a new odometer is installed and cannot be set to the same mileage registered on the prior odometer, the law requires the owner to install a label on the driver's door frame to show the previous odometer reading and the date of replacement. The replacement odometer must then be set to zero. To determine the actual vehicle mileage, add the mileage shown on the label to the current odometer reading. If the replacement odometer can be set to the same mileage as the prior odometer, no door frame label is needed.

FUEL GAGE

The fuel gage will register the approximate fuel level in the tank when the ignition is in the "RUN" position.

Empty, but some fuel is still available as a reserve.

Half full.

Full, but some fuel can still be added to the tank.

The following conditions may be considered normal:

- Fuel station pump may shut off before fuel gage indicates full.
- Amount of fuel required for fill-up may not exactly correspond to gage reading.
- Needle may not move away from full until some time after fill-up.
- Needle may move during turns, stops and accelerations.

When the ignition switch is in the "OFF" position, the needle will not necessarily return all the way to the empty mark.

ENGINE COOLANT TEMPERATURE GAGE

This optional gage is located in the instrument cluster. If the gage shows that an overheat condition exists, as indicated by the pointer moving beyond the normal band, immediate action by the driver is required. If an overheat condition is shown, refer to "Engine Cooling System Overheating" in Section 3. The coolant temperature indication will vary with air temperature and operating conditions. The ignition must be on for accurate readings.

Prolonged driving or idling in very hot weather may cause the pointer to move beyond the normal band. Make a practice of scanning your gages while driving, especially in hot weather and when the vehicle is under load. Refer to Caution under "Engine Coolant Temperature Light".

VOLTMETER

When the engine is operating, the voltmeter indicates the charging system voltage. During minimum electrical load, the pointer will read below the center. As the electrical load is increased, or in stop-and-go driving, the pointer will rotate above the center. A meter reading continuously on either end indicates an electrical system malfunction. Cause of the malfunction should be determined and corrected.

OIL PRESSURE GAGE

The oil pressure gage indicates the pressure at which oil is being delivered to the various parts of the engine requiring lubrication. Pressures registered by the gage may vary according to outside air temperatures or weight of oil being used. Oil pressure of a cold engine being operated at a given speed will be somewhat higher than when the

engine is at normal operating temperature at the same speed. Prolonged high speed operation on a hot day at the given speed will result in somewhat lower oil pressure readings. Readings of 205 to 275 kPa (30 to 40 psi) may be considered normal during moderate road speeds of 35 to 40 mph (55 to 60 km/h) with the engine at proper operating temperature. Gage readings which are consistently high or low under these conditions may indicate lubrication system and/or engine malfunction.

QUARTZ ANALOG CLOCK

The optional quartz analog clock is operated by a crystal controlled electronic circuit for accurate time keeping.

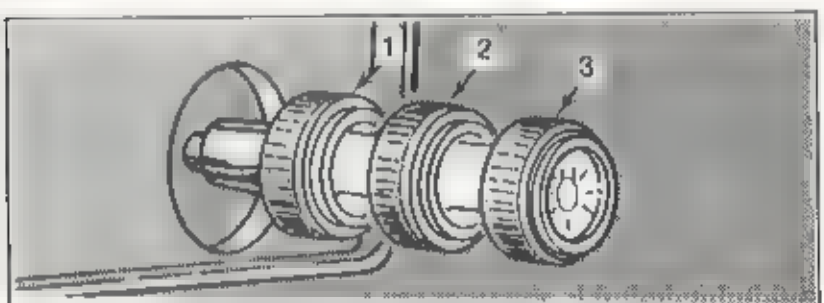
To reset clock, pull out the reset knob, then turn the knob until the clock hands reach the desired time.

CIGARETTE LIGHTER

The optional cigarette lighter is located in the ashtray. To operate, push in. When it becomes heated, it automatically pops out ready for use. Avoid holding the lighter in by hand while it is heating as damage to the heating element may result.

LIGHT SYSTEMS

HEADLIGHT SYSTEM CONTROLS



1. Off
2. Parking Lights, Tail, Instrument and Marker Lights
3. Headlights

F-04467

The three-position light switch controls the headlights, taillights, parking lights, sidemarker lights, instrument lights and dome lights as shown.

Instrument light intensity can be varied by turning knob clockwise or counterclockwise. Full counterclockwise position turns on interior light.

The headlight circuit is protected by a circuit breaker in the light switch. An overload on the breaker will cause the lights to flicker on and off. If this condition develops, have your headlight wiring checked immediately. The headlight beam changer is located in the Turn Signal Lever; for operation refer to "Turn Signal and Multi-Function Lever" in this section.

HEADLIGHT HIGH BEAM INDICATOR LIGHT

The headlights on your vehicle have high and low beams to provide you with proper nighttime visibility for most driving conditions. The "low" beams are used during most city driving. The "high" beams are especially useful when driving on dark roads since they provide long range illumination. The headlight beam indicator light (located on the speedometer face) will be on whenever the high beams or "brights" are in use. The turn signal lever controls the headlight beams and is described in "Steering Column Controls."

HEADLIGHT WARNING BUZZER

The optional headlight reminder buzzer provides an audible warning that the main light switch is in one of the "on" positions (either parking lights or headlights).

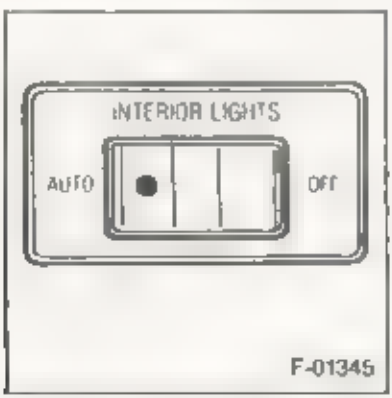
The reminder buzzer is actuated only when the ignition position and the lights are on.

When the parking lights or headlights are to be operated with the key in the OFF position, the reminder buzzer can be shut off by turning the light switch knob until the instrument cluster lights are not on.

DOME LIGHT SWITCH

The dome light is controlled by the on-off button located in the right and left front door pillar. When the doors are opened the dome light will come on. The instrument light switch also controls the dome light when doors are closed. Turn this switch fully counterclockwise and the dome light will come on.

INTERIOR LIGHTS OVERRIDE SWITCH



If your vehicle is equipped with an optional auxiliary lighting package, an INTERIOR LIGHTS override switch is included. This switch, when in the "OFF" position, is designed to allow the vehicle doors to be open and the interior lamps to be off. When the switch is in the "AUTO" position, the interior lights operate in the normal manner. The switch is located on the instrument panel below the heater control.

VENTILATION

Your vehicle has a ventilation system that provides a supply of outside ram a r into the vehicle when it is moving When the vehicle is not in motion you can get a steady flow of outside air into the vehicle with the heater or air conditioning blower running

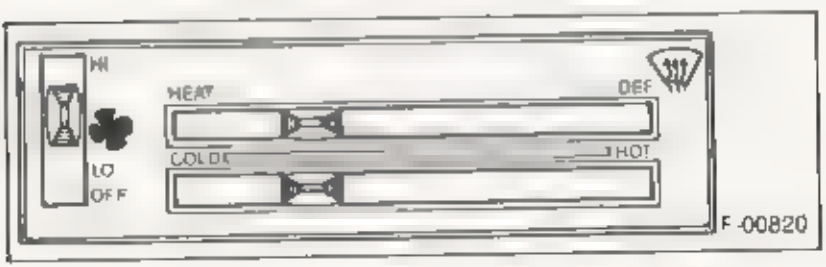
OPERATING TIPS

- C ear snow and ice from the hood and air inlet in front of the windshield Th s helps the heater and defroster work better and reduces the chance of fogging the inside of the w ndshield
- Run the fan on HI for a few moments before driving off This helps clear the intake ducts of snow and moisture and reduces the chance of fogging the inside of the windows
- Always keep the front inlet grilles clear of obstructions (leaves ice snow, etc)
- Always keep the underseat air path clear of objects

AIR VENTS

The control levers for the left and right air vent doors are located on the kick panels Vehicles with air conditioning have only a left a r vent door The amount of air discharged at these lower outlets increases with vehicle speed Maximum airflow can be obtained by open ng any of the side door windows If so equipped the rear quarter swing-out windows will opt mize lower vent performance and provide max mum a rflow without open ng a side door glass In th s condition there is minimum air buffeting and road noise

HEATING



FAN LEVER

This lever ("OFF" "LO" "HI") controls the fan speed in all air selector lever positions

TEMPERATURE SELECTOR — LOWER LEVER

The temperature selector lever allows a selection of air temperature from COLD (ambient air temperature) at the far left to HOT at the far right.

MODE SELECTOR — UPPER LEVER

HEAT — In this position, most of the air is delivered through the heater outlet with some air flow to the windshield (defroster outlets). Adjust this lever between the "HEAT" and "DEF" positions to obtain a variable air distribution between the floor air outlet and the windshield air outlets.

DEF — "Defrost," in this position, most of the air is delivered to the windshield (defroster outlets) with a small amount to the floor outlets.

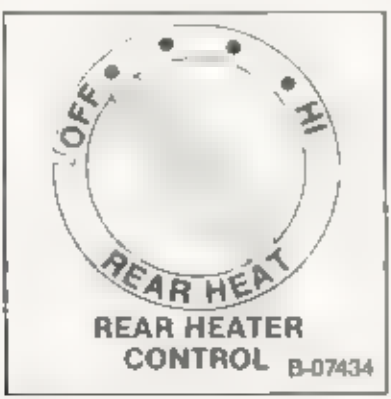
The windshield defrosting and defogging system assists in providing good visibility through designated areas of the windshield during inclement weather conditions. Before operating the vehicle, clean the windshield.

Operate the system for 30 seconds before switching to "DEF." This removes humid air from the system and minimizes fogging of the glass which can occur if humid air is discharged onto a cool windshield.

HEATER OUTPUT (DIESEL ENGINES)

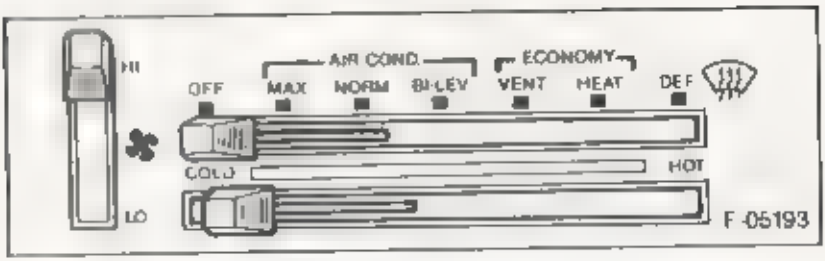
During extended idle at cold ambient temperatures, the heater will discharge cool air. This is caused by low fuel consumption and a low heat reaction. Higher coolant temperatures are obtained under high-speed, high-load conditions. Also, low coolant can cause cool heater air at high engine speeds. Check the coolant level (refer to "Cooling System" in Section 5).

REAR HEATER



The rear heater supplies heat to the rear of the vehicle when the fan switch is in any position except "OFF." The three-speed fan switch is located in the instrument panel above the main heater controls.

AIR CONDITIONING



During A/C and defrost operation the air conditioning compressor cycles off and on. This causes a slight increase and decrease in engine power and speed.

FAN

The fan lever has four positions from "LO" at the bottom to "HI" at the top. When the air conditioning system is "OFF" the fan will be off.

TEMPERATURE SELECTOR — LOWER LEVER

The temperature lever allows a selection of air temperature from "COLD" at the far left to "HOT" at the far right.

MODE SELECTOR — UPPER LEVER

This lever provides a selection to handle various heating and cooling requirements.

OFF — The system and the blower do not operate.

MAX A/C — Air from the passenger compartment is recirculated through the system (with some outside air) and discharged from the A/C outlets. Select the fan speed in the "MAX" position. Use this position with the temperature lever in "COLD" for maximum cooling.

NORM A/C — Outside air passes through the system and discharges through the upper outlets. Use this position for most air conditioning situations. Vary fan speed and temperature as required.

BI-LEV A/C — Outside air is passed through the system and delivered from the heater lower outlet and upper outlets to provide comfort and keep the windshield and side glass clear under low fogging conditions.

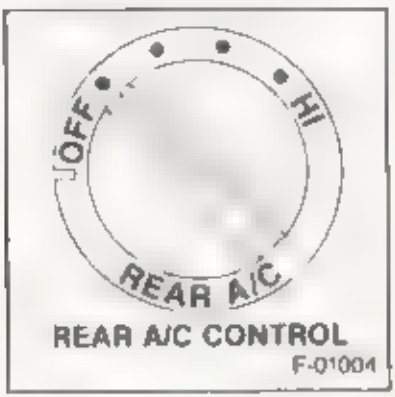
"ECONOMY" — Use these positions "VENT" and "HEATER" for greater fuel economy. The A/C compressor will not operate in these positions.

VENT Outside air passes through the system and discharges from the upper and lower outlets. Use this position for cool to moderate weather when refrigeration is not required. Adjust fan speed and temperature as required.

HEATER Outside air passes through the heater (lower) outlet and windshield air outlets. Adjust the temperature as required. Use this position for most winter driving.

DEF (Defrost) In this position, most of the outside air is delivered to the windshield (defroster outlets) with a small amount to the floor outlets. Adjust temperature and fan speeds as required. Use this position for severe fogging and icing.

REAR INTERIOR ROOF-MOUNTED A/C UNIT



The optional roof-mounted unit is used with the air conditioning system, and both systems use the same refrigerant. A blower switch, located above the main A/C controls on the instrument panel, controls this unit.

In the "OFF" position, the fan does not operate even though the refrigerant is circulating in the system if the front system is operating. To operate the rear unit, select the fan speed. Use the rear fan to circulate interior air regardless of front system operation.

Operating Tips

Before using the system, open the windows to permit hot air to escape. Close the windows when using the system.

DELCO SOUND SYSTEMS

Your vehicle may have one of several optional Delco GM Sound Systems. (To listen to any system, the ignition must be in "Run" or "Accessory".)

NOTICE All Delco Sound Systems have ungrounded speakers. Installing add-on tape players, CBs or other units which use the vehicle speakers may damage your Delco sound system or impair operation of the add-on unit. Please consult your dealer in advance if you are considering additions.

FM AND FM STEREO

FM broadcasts are "line of sight" from station antenna to receiving antenna. The range is often limited to 25 miles (40 km) or less for steady reception. Tall buildings or hills may cause flutter or noise which is not the fault of the radio; select a stronger station for clear sound.

AM STEREO

AM stations broadcasting C-QUAM* stereo may be received in stereo if the receiver has this feature. Switching to stereo improves fidelity but may increase noise on weaker stations. Switching stereo off may improve the reception in this case.

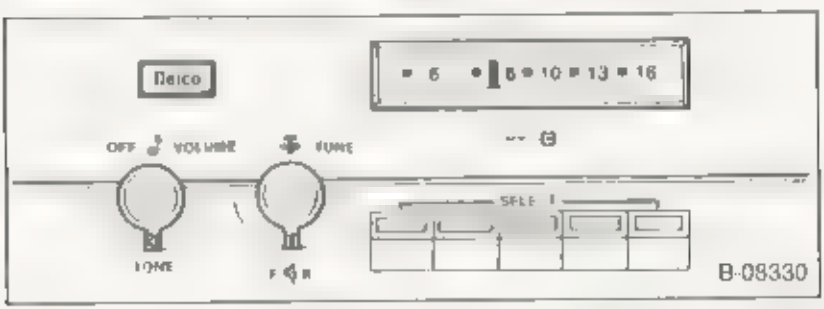
*C-QUAM is a registered trademark of Motorola, Inc.

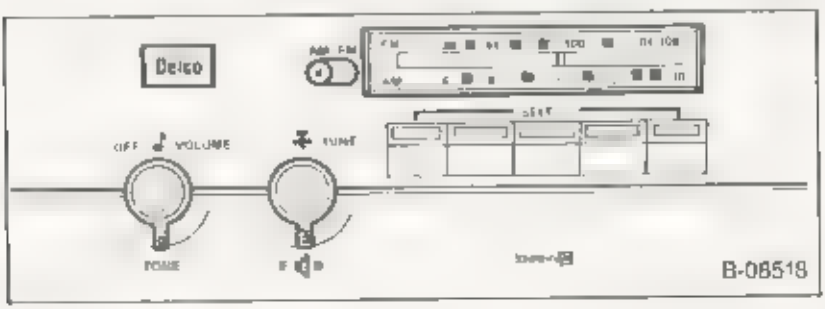
Most AM stations across the country broadcast in C-QUAM, but some do not. Check with your local stations for compatibility in your area.

STEREO INDICATOR

An indicator lights whenever a stereo broadcast is being received.

AM OR AM-FM MONAURAL RADIO





The following controls are common to both AM and AM-FM monaural sound systems.

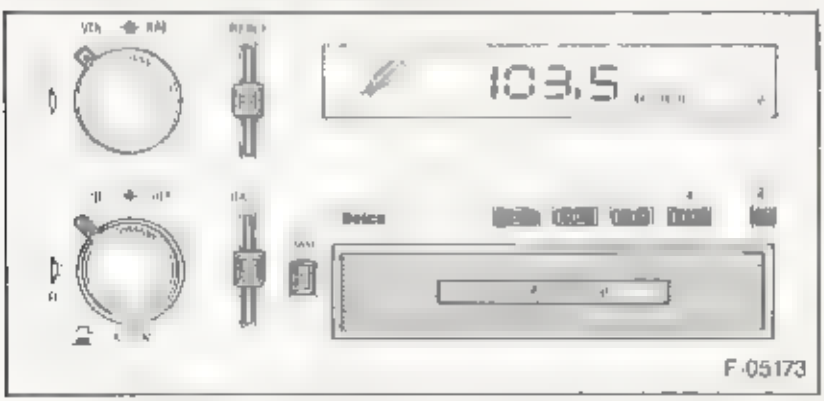
- **Left Knob**—This knob turns the set on or off and controls the volume. Behind the volume knob is a tone control. When turned to the right it increases treble and voice clarity; when turned to the left it increases bass.
- **Right Knob**—This knob is a manual tuning control for choosing radio stations. For radios with rear speakers, a fader control is behind it. This control adjusts the sound between the front and rear speakers.
- **Pushbuttons**—Each radio has five pushbuttons you can use to select your favorite stations easily. On AM-FM radios, you may select five AM and five FM stations for a total of ten selections. Make sure the bandswitch is on the band you want when setting the stations. After using a pushbutton, you may have to "fine-tune" the radio by hand for the best reception.

  To "set up" the pushbuttons:

  1. Use the tuning knob to tune in the desired station.
  2. Choose the button you wish to use and pull it straight out.
  3. Press the button until it stops. The radio is designed to tune to the selected station whenever you press the button.

     On AM-FM radios, there is a switch next to the radio dial for choosing the desired band. Push the switch left for AM and right for FM. When using a pushbutton, be sure the switch is set for the appropriate band.

ETR AM-FM STEREO (NO SEEK/SCAN)



To operate the ETR AM-FM Stereo Radio:

- **Power Button ("PWR")** – press to turn radio on. Press again to turn radio off.
- **Upper Knob** — rotate knob to control volume. Press knob to recall station frequency when listening to the radio with the ignition on, or to display time-of-day with ignition off.

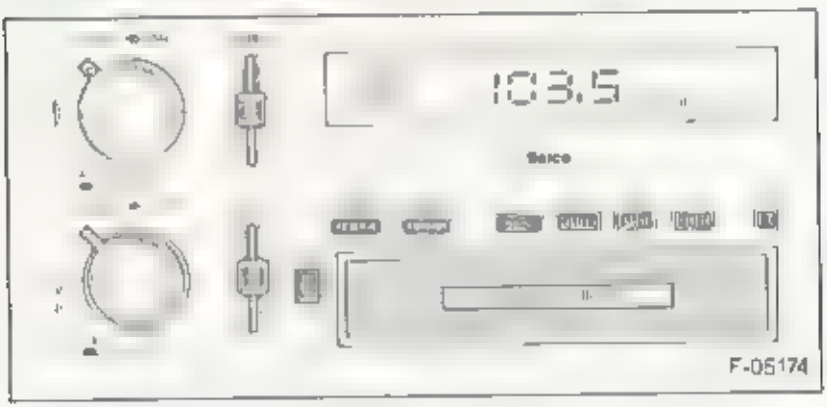
- **Balance Control** (located behind left knob) — turn to adjust left/right speaker balance.
- **Lower Knob** — rotate knob to tune radio stations manually. Frequency will be displayed during tuning. Press knob to select AM or FM band alternately.
- **Front/Rear Speaker Control** (located behind lower knob) — rotate control to adjust the sound between the front and rear speakers.
- **Bass and Treble Controls** — slide treble control up to increase treble, or down to decrease treble. Slide bass control up to increase bass, or down to decrease bass.
- **Station Preset Buttons**

  The radio has four pushbuttons for presetting favorite stations.

  1. Select the desired band (AM or FM) and tune to the desired station.
  2. Press SET button. Within five seconds press one of the four station buttons.

  NOTE: Up to three additional stations on each band may be preset by "pairing" the pushbuttons.
  (1) Tune in desired station. (2) press SET and within five seconds press any two adjacent pushbuttons at the same time. (The station will return when the two buttons are pressed again.)

ETR AM-FM STEREO (SEEK/SCAN) WITH CLOCK



To Operate the ETR AM-FM Stereo Radio:

- **Power Button ("PWR")** — press to turn radio on. Press again to turn radio off.
- **Upper Knob** — rotate knob to control volume. Press knob to recall station frequency when listening to the radio with the ignition on, or to display time-of-day with ignition off.
- **Balance Control** (located behind upper knob) — turn to adjust left/right speaker balance.
- **Lower Knob** — rotate knob to tune radio stations manually. Frequency will be displayed during tuning. Press knob to select AM or FM band alternately.

- **Front/Rear Speaker Control** (located behind lower knob) — rotate control to adjust the sound between the front and rear speakers.
- **Bass and Treble Controls** — slide treble control up to increase treble or down to decrease treble. Slide bass control up to increase bass, or down to decrease bass.
- **Station Preset Buttons**

  The radio has four pushbuttons for presetting favorite stations.

  1. Select the desired band (AM or FM) and tune to the desired station.
  2. Press SET button. Within five seconds press one of the four station pushbuttons.

  The radio will return to the station when the station button is pressed again.

  NOTE: Up to three additional stations on each band may be preset by "pairing" the pushbuttons.

  (1) Tune in desired station. (2) press SET and within five seconds press any two adjacent pushbuttons at the same time. (The station will return when the two buttons are pressed again.)

- **Seek and Scan**

  Use the SEEK and SCAN buttons for automatic station tuning.

  Press SCAN button to sample each station being received automatically. To stop SCAN, press SCAN button again.

  The SCAN indicator light on the frequency dial will be lit during SCAN operation.

  Press the SEEK button to locate and retain the next listenable station on the band automatically.

  The FM stereo indicator will light when tuned to an FM station broadcasting in stereo. Stereo (full channel) sound is more realistic.

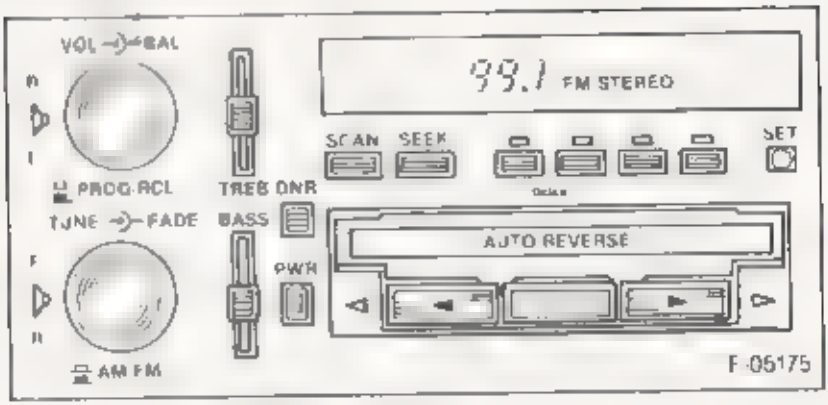
- **Time Set:**

  To set hour, press SET button. The SET indicator light on the dial will then light up and the radio frequency will be displayed. Then press SCAN button, holding SCAN button in until correct hour appears.

  To set minutes, press SET button. The SET indicator light will then light up and the radio frequency will be displayed. Then press SEEK button, holding SEEK button in until correct minute appears.

  NOTE: After you press the SET button, the radio frequency will be displayed. The time-of-day will be displayed when you press the SCAN or SEEK button.

ETR AM-FM STEREO (SEEK/SCAN) WITH CLOCK AND CASSETTE



To operate the ETR AM-FM Stereo radio

- **Power Button (PWR) —** press to turn radio on. Press again to turn radio off.
- **Upper Knob —** rotate knob to control volume. Press knob to recall station frequency when listening to the radio with the ignition on, or to display time of day with ignition off. Press knob to select the other side of the tape when the cassette is playing.
- **Balance Control** (located behind upper knob) — turn to adjust left/right speaker balance.
- **Lower Knob —** rotate knob to tune radio stations manually. Frequency will be displayed during tuning. Press knob to select AM or FM band.
- **Front/Rear Speaker Control** (located behind lower knob) — rotate control to adjust the sound between the front and rear speakers.
- **Bass and Treble Controls —** slide treble control up to increase treble or down to decrease treble. Slide bass control up to increase bass, or down to decrease bass.
- **Station Preset Buttons**

  The radio has four pushbuttons for presetting favorite stations.

  1. Select the desired band (AM or FM) and tune to the desired station.
  2. Press SET button. Within five seconds press one of the four station pushbuttons.

  The radio will return to the station when the station button is pressed again.

  NOTE: Up to three additional stations on each band may be preset by "pairing" the pushbuttons.

  (1) Tune in desired station. (2) press SET and within five seconds press any two adjacent pushbuttons at the same time. (The station will return when the two buttons are pressed again.)

- **Seek and Scan**

  Use the SEEK and SCAN buttons for automatic station tuning.

  Press SCAN button to sample each station being received automatically. To stop SCAN, press SCAN button again.

  The SCAN indicator light on the frequency dial will be lit during SCAN operation.

  Press the SEEK button to locate and retain the next listenable station on the band automatically.

  The FM stereo indicator will light when tuned to an FM station broadcasting in stereo. Stereo (dual channel) sound is more realistic.
- **Time Set:**

  To set hour, press SET button. The SET indicator light on the dial will then light up and the radio frequency will be displayed. Then press SCAN button, holding SCAN button in until the correct hour appears.

  To set minutes, press SET button. The SET indicator light will then light up and the radio frequency will be displayed. Then press SEEK button, holding SEEK button in until correct minutes appears.

  NOTE: After you press the set button, the radio frequency will be displayed. The time of day will be displayed when you press the SCAN or SEEK button.

To operate tape player:

Insert the cassette squarely through the door. Tape will snap into position when fully inserted. This automatically switches the unit from radio to tape operation.

After the cassette has snapped into position, adjust the volume and fader controls to your preference.

To advance tape rapidly, press the button next to the light arrow (arrow on button points in same direction as lighted arrow). To reverse the tape and locate an earlier selection, press the button which has an arrow pointing in opposite direction. To stop fast motion and return to playing speed, press STOP-EJECT lightly; press again, but more firmly to eject tape.

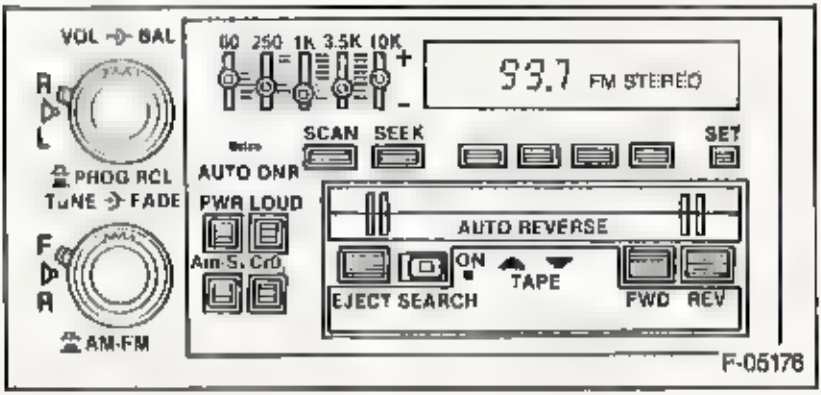
- Reversing Sides — Press the upper left knob (volume knob) to play the other side of the tape. When end of tape is reached, it automatically reverses direction and plays other side.
- Tape Indicator Lights — When lighted arrow located below tape door points left, the top side of the tape is being played, when arrow points right, bottom side is being played.

To remove the tape or listen to the radio, push the STOP-EJECT button.

Press the Dynamic Noise Reduction (DNR*) button to remove high frequency background hiss on AM, FM, FM Stereo, and tape.

For best results, 120 minutes tapes are not recommended.

ETR AM STEREO-FM STEREO (SEEK/SCAN) WITH AUTO-REVERSE MUSIC SEARCH CASSETTE, 5-BAND EQUALIZER AND CLOCK



To operate the ETR AM Stereo-FM Stereo radio:

- **Power Button ("PWR")** — press to turn radio on. Press again to turn radio off.
- **Upper Knob** — rotate knob to control volume. Press knob to recall station frequency when listening to the radio with the ignition on, or to display time-of-day with ignition off. Press knob to select the other side of the tape when the cassette is playing.
- **Loudness Button ("LOUD")** — Press to boost bass frequencies when the radio is playing at low volume.
- **Balance Control** (located behind upper knob) — turn to adjust left/right speaker balance.
- **Lower Knob** — rotate knob to tune radio stations manually. Frequency will be displayed during tuning. Press knob to alternately select AM or FM band.
- **Front/Rear Speaker Control** (located behind lower knob) — rotate control to adjust the sound between the front and rear speakers.
- **AM Stereo ("AM-ST")** — press to receive AM stereo. "Stereo" indicator light will be displayed when tuned to a station broadcasting C-QUAM® * AM stereo, provided it is being received with adequate signal strength in your locality. When the button is "out," all AM stations will be received in mono.
  *C-QUAM® is a registered trademark of Motorola, Inc.
- **FM Stereo** — the stereo indicator will light when tuned to an FM station broadcasting in stereo. Stereo (dual channel) sound is more realistic to the ear. "Stereo" operation means the radio is separating a stereo broadcast back into the original two channels, called "left" and "right."
- **5-Band Graphic Equalizer** — allows you to adjust bass, midrange, and treble to suit personal taste. Move control up to increase that frequency range, or down to decrease that frequency range.

  NOTE: 60 and 250 denote bass; 1K denotes midrange; 3.5K and 10K denote treble.

Generally the 1K control is placed in the center (detent) position while the bass and treble controls are adjusted upward to varying degrees.

Since the 10K control has the most influence on treble, it may produce high frequency hiss when fully up. If this occurs, move it down until the hiss disappears.

This radio has automatic Dynamic Noise Reduction ("DNR") to reduce high frequency background hiss on AM, FM, AM Stereo, FM Stereo, and tape.

- **Station Preset Buttons**

The radio has four pushbuttons for presetting favorite stations.

1. Select the desired band (AM or FM) and tune to the desired station.
2. Press SET button. Within five seconds press one of the four station buttons.

The radio will return to the station when the station button is pressed again.

NOTE: Up to three additional stations on each band may be preset by "pairing" the pushbuttons.

(1) Tune in desired station. (2) press SET and within five seconds press any two adjacent pushbuttons at the same time. (The station will return when the two buttons are pressed again.)

- **Seek and Scan**

Use the SEEK And SCAN buttons for automatic station tuning.

Press SCAN button to sample each station being received automatically. To stop SCAN, press SCAN button again.

The SCAN indicator light on the frequency dial will be lit during SCAN operation.

Press the SEEK button to locate and retain the next listenable station on the band automatically.

- **Time Set:**

To set hour, press SET button. The SET indicator light on the dial will then light up. Then press SCAN button, holding SCAN button in until the correct hour appears.

To set minutes, press SET button, the SET indicator light will then light up. Then press SEEK button, holding SEEK button in until correct minutes appears.

NOTE: After you press the SET button, the radio frequency will be displayed. The time-of-day will be displayed when you press the SCAN or SEEK button.

To operate tape player:

Insert the cassette squarely through the door. This automatically switches the unit from radio to tape operation. If the sound is garbled (or there is no sound), eject the tape and reinsert it squarely.

After the cassette has snapped into position, adjust the volume and fader controls to your preference.

To advance the tape, press the forward ("FWD") button. To listen to the earlier portion of the tape, press the reverse ("REV") button. To stop forward or reverse movement, press the opposite button lightly.

To listen to the next selection, slide the "SEARCH" button to the right and press the forward (FWD) button. The radio will seek the next selection.

To listen to the previous selection again, slide the "SEARCH" button to the right and press the reverse (REV) button. The radio will repeat the previous selection.

The "ON" light to the right of the search switch will be on while the search function is engaged.

When the left triangle indicator light is lit, the top side of the tape is playing. When the right triangle indicator light is lit, the bottom side of the tape is playing.

To play the other side of the tape before the present side has ended, press the upper left knob. This will automatically play the opposite side of the tape.

NOTE: When end-of-tape is reached, the unit will automatically play the other side of the tape. To remove the tape or listen to the radio, push the EJECT button.

When ignition is turned off, the tape is automatically ejected.

Select the setting for proper tape equalization (CrO_2) as follows:

1. Select 70 usec (push button in)
2. Select 120 usec (button is out)

The equalization setting which is desired will vary according to the type of tape being used. Chrome and metal tapes have 70 usec equalization, while iron tapes have 120 usec equalization.

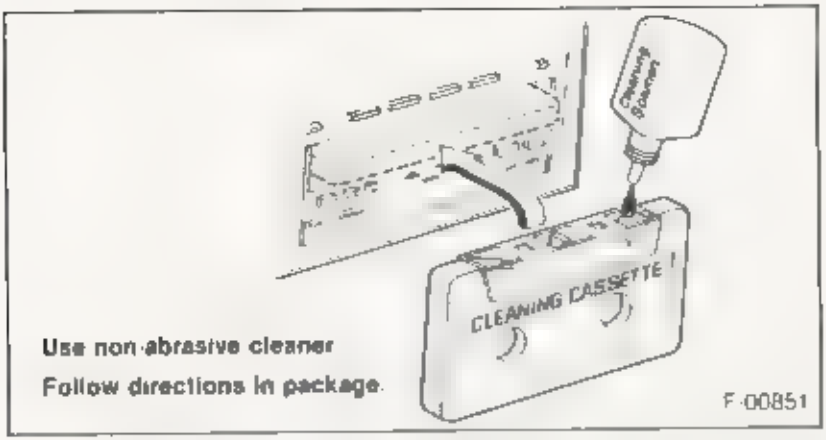
The tape bias is often indicated on the cassette label or case.

For best results, 120 minute tapes are not recommended.

TAPE AND TAPE PLAYER CARE

Optimum performance can be maintained by cleaning the internal tape head, capstan, and pinch roller periodically (approximately each 100 hours of operation). This can be done by inserting a nonabrasive cleaning cassette in place of the music tape.

Store cassettes away from extreme heat or direct sunlight. Protect the open ends from dirt or damage; store them in their original cases or other protective cases.



For best results, 120 minutes tapes are not recommended.

When leaving the vehicle, cassettes may be left in the tape player. If the deck is the "auto reverse" type (tapes are either automatically ejected or internally protected). In other models, tapes should be removed to prevent possible damage to the tape or tape player.

FIXED MAST ANTENNA

The fixed mast antenna is designed to withstand most car washes without damage. If the mast becomes slightly bent, you can straighten it by hand. The mast antenna can be replaced if severely bent (by vandalism, etc.). Mast antennas must be kept clean for good performance.

MOBILE RADIO SYSTEMS

Mobile two-way radio units and mobile telephone equipment are subject to federal rules and must be installed by trained personnel. Certain such equipment or the manner of its installation may possibly adversely affect vehicle operation. Expenses incurred to protect the vehicle's systems from the operation with added mobile communication systems are not the responsibility of GM.

Citizen Band (CB) radios, garage door openers, and GM OEM cellular phones normally will not affect vehicle operation.

SECTION 2D
OTHER CONTROLS AND FEATURES

LOCKING REAR AXLE

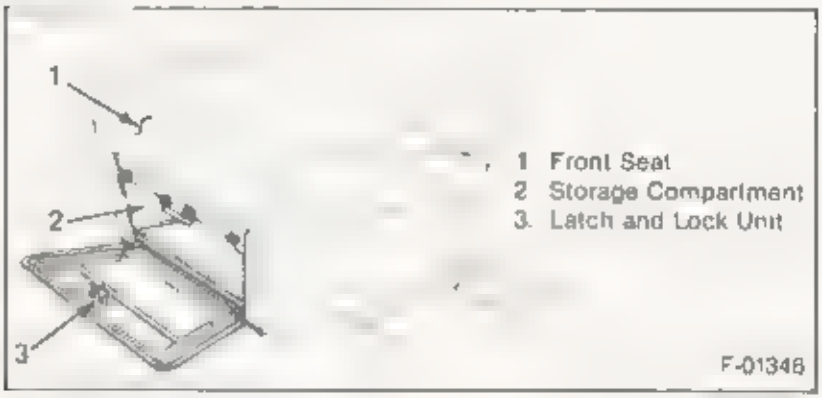
The optional locking rear axle can give added traction on snow, ice, mud, sand, gravel, etc. Normally, the locking axle unit works like a standard axle. However, when either drive wheel is on a slippery surface, and the opposite wheel has better traction, the locking unit can continue to move the vehicle even though one of the wheels may be spinning.

Refer to "Driving on Slippery Surfaces" in Section 2. Also refer to "Freeing The Vehicle From Sand, Mud, Snow or Ice" in Section 3.

AIR CYLINDERS

Some models have front suspensions that are equipped with urethane air cylinders inside the coil springs. Air pressure in these cylinders may be increased or decreased to adjust vehicle trim and minimize "Crash Through" on rough road bumps. Inflation pressure should be checked monthly. The inflation valves are located at the lower end of the air cylinders. Inflation pressure must be maintained between 70 kPa (10 psi) minimum and 345 kPa (50 psi) maximum.

FRONT SEAT STORAGE COMPARTMENT



The optional front seat storage compartment will allow storing items and locking them up. Open by turning the latch clockwise, close with a firm push. The compartment can be locked by using the oval-head key.

TRAILER WIRING HARNESS

There are two types of trailer wiring harnesses available, a 7-wire harness and a 5-wire harness.

The 7-wire harness (including a 30 amp fused battery feed) is located at the rear bumper cross member. Loops are taped and bound with a plastic strap to the rear tank strap. This harness does not have a connector at the end and must be wired after production by a qualified service person. The trailer wiring harness should be attached to the trailer then strapped to the vehicle frame rail in such a way to prevent bending, binding or breakage of the wiring. For fuse information, refer to "Fuses and Circuit Breakers" in Section 6.

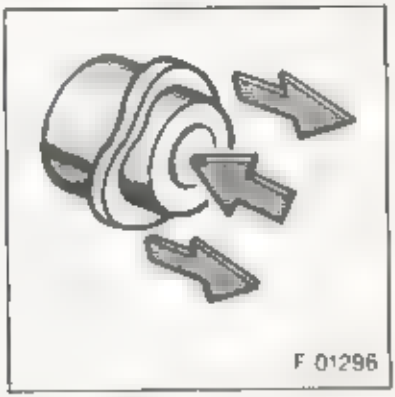
The 5-wire harness is located on the rear floor behind the jack and is wrapped and bound with a plastic strap. This harness should be routed between the door and the floor. Enough slack should be left in the harness to prevent binding, bending or breakage of the wiring.

Do not allow any trailer wiring harness to be so loose that it drags on the ground. To prevent this, tape or strap the trailer portion of the harness (if used) to the tongue of the trailer.

When the harness is not being used, wrap the harness together and bind it with a tie strap to keep it from being damaged. Store the harness in its original location.

SECTION 3
IN CASE OF EMERGENCY

HAZARD WARNING FLASHER



Use the hazard warning flasher to warn other drivers any time your vehicle becomes a traffic hazard, day or night. Avoid stopping on the roadway if possible. To turn it on, push the button inside the collar beneath the steering wheel on the right of the steering column. The flasher should work with the ignition either off or on. The turn signals do not work when the hazard flasher is on. If the brake pedal is pushed down, the lights will not flash until the brake is released. To turn off the flasher, pull the button collar out.

EMERGENCY STARTING YOUR VEHICLE DUE TO A DISCHARGED BATTERY

If your vehicle will not start due to a discharged battery, it can often be started by using energy from another battery — a procedure called jump starting. Should your vehicle have an optional diesel engine with two batteries, use only the battery on the passenger's side (located closer to the starter). This reduces electrical resistance when jump starting. Ignore the second battery.

NOTICE: Do not push or tow this vehicle to start it. Under some conditions this may damage the catalytic converter (on gasoline engines) or other parts of the vehicle. Also, since this vehicle has a 12-volt battery, be sure the vehicle or equipment used to jump start your engine is also 12 volt. Use of any other type system may damage the vehicle's electrical components.

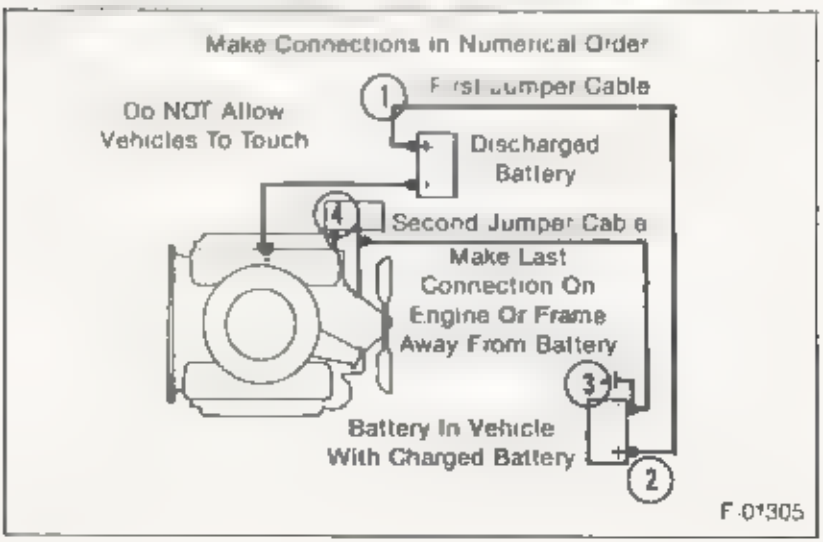
At low temperatures it may not be possible to start your diesel engine from a single battery in another vehicle. However, you can use your vehicle to jump start another vehicle.

JUMP STARTING INSTRUCTIONS

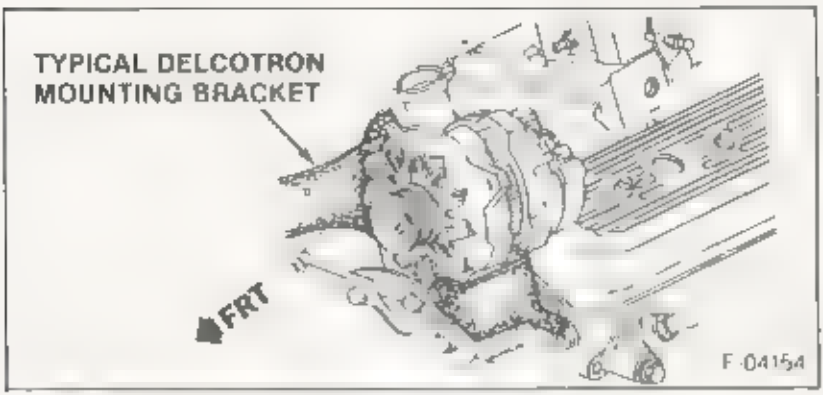
CAUTION: Batteries produce explosive gases, contain corrosive acid, and supply levels of electrical current high enough to cause burns. Therefore, to reduce the risk of personal injury when working near a battery:

- **Always shield your eyes. Avoid leaning over the battery whenever possible.**
- **Do not expose the battery to open flames or sparks.**
- **Be sure any batteries that have filler caps are properly filled with fluid.**
- **Do not allow battery acid to contact eyes or skin. Flush any contacted area with water immediately and thoroughly. Get medical help.**
- **Follow each step in the jump starting instructions.**

1. Position the vehicle with the good (charged) battery so that the booster (jumper) cables will reach, but never let the vehicles touch. Also be sure booster cables do not have loose or missing insulation.
2. In both vehicles:
   - Turn off the ignition and all lights and accessories except the hazard flasher or any lights needed for the work area.
   - Apply the parking brake firmly, and shift the automatic transmission to "P" (Park) or manual transmission to "N" (Neutral).



3. Making sure the cable clamps do not touch any other metal parts, clamp one end of the first booster cable to the positive (+) terminal on one battery, and the other end to the positive terminal on the other battery. Never connect (+) to (–).



4. Clamp one end of the second cable to the negative (–) terminal of the good (charged) battery. Make the final connection to a heavy metal bracket, such as the mounting bracket for the Delcotron generator or air conditioner compressor, on the engine about 450 millimeters (18 inches) from the discharged battery. Make sure the cables are not on or near pulleys, belts, or other parts that will move when the engine is started.

5. Start the engine of the vehicle with the good (charged) battery and run the engine at a moderate speed for several minutes. Then, start the engine of the vehicle that has the discharged battery.

6. Remove the booster cables by reversing the above installation sequence exactly. When removing each clamp, take care it does not touch any other metal while the other end remains attached.

ENGINE COOLING SYSTEM

OVERHEATING

CAUTION: If the Engine Coolant Temperature Light or Gage shows an overheat condition or you have other reason to suspect the engine may be overheating, continued operation of the engine (other than as spelled out here) even for a short time may result in a fire and the risk of personal injury and severe vehicle damage. Take immediate action as outlined following.

If you see or hear escaping steam or have other reason to suspect there is a serious overheat condition, stop and park the vehicle as soon as it is safe to do so and turn off the engine immediately and get out of the vehicle.

The cooling system may overheat if the coolant level is too low. If there is a sudden loss of coolant (such as a hose splitting), or if other problems occur. It may also temporarily overheat during severe operating conditions such as:

- climbing a long hill on a hot day.
- stopping after high-speed driving.
- idling for long periods in traffic.
- towing a trailer.

If the Engine Coolant Temperature light comes on (or if you have an Engine Coolant Temperature gage and it shows an overheat condition) or you have any reason to suspect the engine may be overheating, take the following steps:

- If your air conditioner is on, turn it off. On vehicles with the 7.4 L engine, the air conditioner will automatically turn off if the coolant exceeds a certain temperature. Also, turn on the heater.
- If you are stopped in traffic, shift the transmission to Neutral.

If the warning light does not go off (or engine coolant temperature does not start to drop) within a minute or two:

- Pull over, stop and park the vehicle as soon as it is safe to do so.
- Press the accelerator pedal to increase engine speed to about twice as fast as normal idle speed. Bring the idle speed back to normal after two or three minutes.

If the warning light does not go off (or engine coolant temperature does not start to drop), turn off the engine and get out of the vehicle, then proceed as follows:

CAUTION: To help avoid being burned,

- **Do not open the hood if you see or hear steam or coolant escaping from the engine compartment. Wait until no steam or coolant can be seen or heard before opening the hood.**
- **Do not remove the radiator cap or coolant recovery tank cap if the coolant in the recovery tank is boiling. Also do not remove the radiator cap while the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure if either cap is taken off too soon.**

If no steam or coolant can be seen or heard, raise the engine hood. If the coolant is boiling, wait until it stops before proceeding. Look at the see-through recovery tank. The coolant level should be at or above the "FULL COLD" mark on the recovery tank.

If your vehicle has the 7.4 Liter TBI engine with optional air conditioner, it also has an auxiliary cooling fan. Refer to "Engine Cooling Fan" in Section 5.

CAUTION: To help prevent personal injury, keep hands, tools and clothing away from both engine cooling fans. The electric fan can come on whether or not the engine is running. The fan can start automatically in response to a heat sensor when the ignition (engine control switch) is on

Make sure the fan belts are not broken or off the pulleys, and that the fan turns when the engine is started

If the coolant level in the recovery tank is low, look for leaks at the radiator hoses and connections, heater hoses and connections, radiator, and water pump. If you find major leaks, or spot other problems that may have caused the engine to overheat, do not run the engine until these problems have been corrected. If you do not find a leak or other problem, carefully add coolant to the recovery tank. (Coolant is a mixture of ethylene glycol anti freeze and water; refer to "Engine Cooling System" in Section 5 for the proper anti freeze and mixture.)

CAUTION: To help avoid being burned, do not spill antifreeze or coolant on the exhaust system or hot engine parts. Under some conditions, the ethylene glycol in engine coolant is combustible.

If the coolant level in the recovery tank is at the correct level but there is still an indication on the instrument panel of an overheat condition:

- You must let engine cool first. You may then add coolant directly to the radiator. Refer to "Adding Coolant" under "Engine Cooling System" in Section 5. Follow steps 1 through 3 for the correct way to remove the radiator cap and add coolant.

Once the Engine Coolant Temperature light has gone out (or the Engine Coolant Temperature gage no longer signals an overheat condition), you can resume driving at reduced speed. Return to normal driving after about ten minutes if the light does not come back on (or the gage pointer does not again show an overheat condition).

If no cause for the overheat condition was found, see a qualified service technician.

The LL4 diesel engine (Engine Code "J") has a deaeration tank instead of a coolant recovery tank. The deaeration tank should be kept approximately 1/2 full of a 56/44 mixture of water and ethylene glycol antifreeze (meeting GM Specification 1825-M). There is no radiator cap, to add coolant to the system a pressure cap is included on the deaeration tank. Follow all the cautions that apply to a system equipped with a coolant recovery tank.

The deaeration pressure cap, a 62 kPa (9 psi) must be used and installed tightly, otherwise coolant may be lost and damage to the engine may result from overheating. The cap should be checked periodically for proper operation.

JACKING

CAUTION To help avoid personal injury

- Follow all jacking and storage instructions
- Use jack only for lifting this vehicle during wheel change.
- Never get beneath the vehicle, start or run engine while vehicle is supported by jack
- Always securely restore spare tire (or flat tire) and all jacking equipment

1 Before changing tire

A Park on a level surface and firmly set parking brake

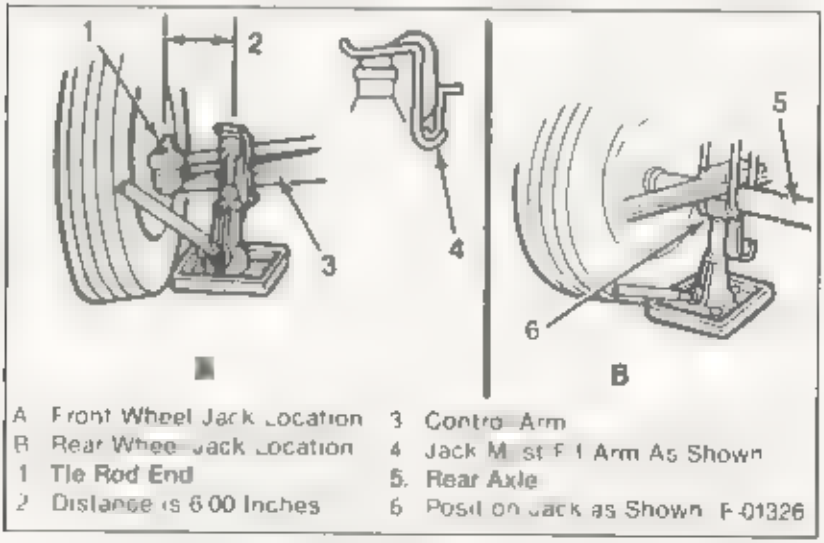
B Turn on hazard warning flasher

C Set automatic transmission in "P" (Park) (manual transmission in "R" (Reverse))

D Block front and rear of tire at corner diagonally opposite to one being changed

E Remove spare tire and jacking tools from storage area (refer to storage instructions in this section)

2 Position the jack

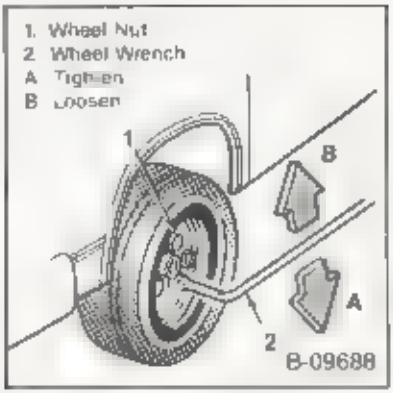


A Front Wheel Jack Location
B Rear Wheel Jack Location
1 Tie Rod End
2 Distance is 6.00 Inches
3 Control Arm
4 Jack Must Fit Arm As Shown
5. Rear Axle
6 Position Jack as Shown F-01326

A Position jack at front tire location for front tire flat and rear position for rear tire flat

B Raise jack until lift head engages lower control arm (front location) or axle (rear location).
Do not raise vehicle until after step 3.

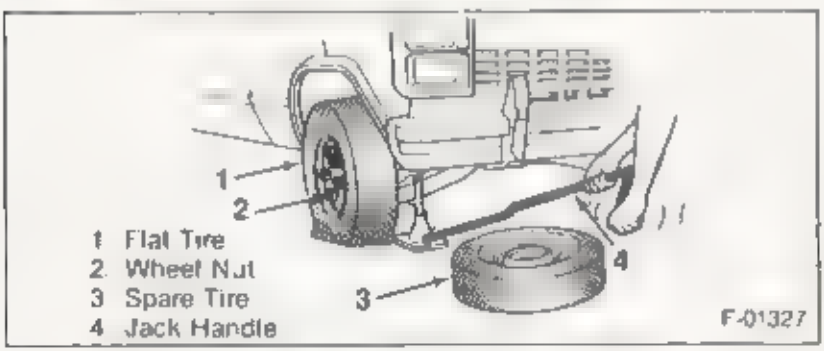
3. Loosen wheel nuts



A Remove wheel trim using wheel wrench

B Loosen but do not remove wheel nuts. Nuts can be damaged if wheel wrench is not fully engaged on nut

4 Raise the vehicle



A Raise vehicle by slowly turning jack handle clockwise so that inflated spare tire will clear surface when installed

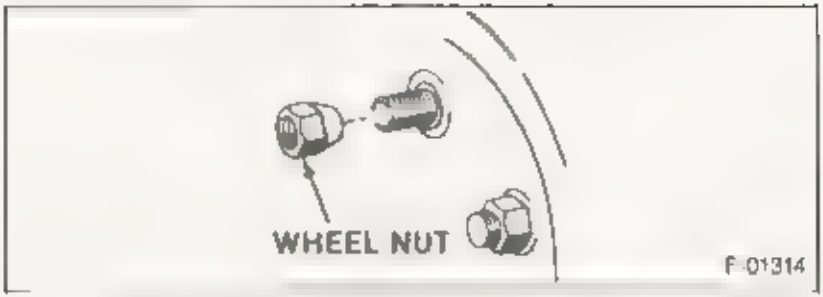
B Remove the wheel nuts and flat tire

C Any corrosion present on inside of wheel and wheel mounting surface on vehicle should be removed before tire is replaced (or as soon afterward as possible)

5. Replace tire

A Install spare tire reusing the wheel nuts (step 4) with cone shaped end toward wheel

B. Slightly tighten each nut



B After changing tire

A Lower vehicle by turning jack handle counterclockwise

B Tighten wheel nuts (step 3) in a criss-cross sequence by turning wrench clockwise

C Lower jack to collapsed condition ready for storage

D Restore jacking tools and flat tire by following storage instructions in reverse order

E As soon as possible tighten wheel nuts with a torque wrench to specifications shown in Section 6.

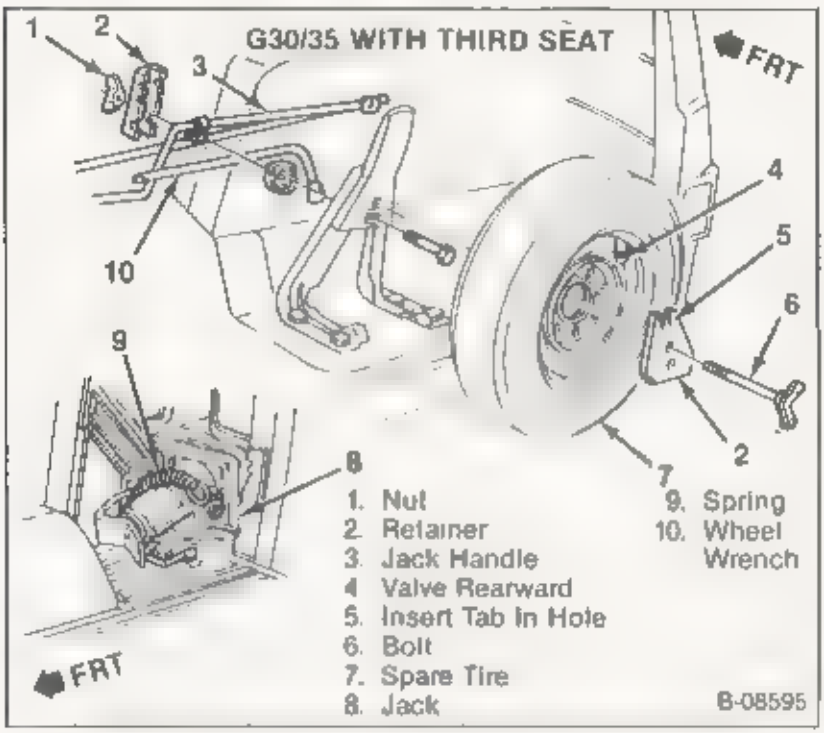
DAMAGED TIRE

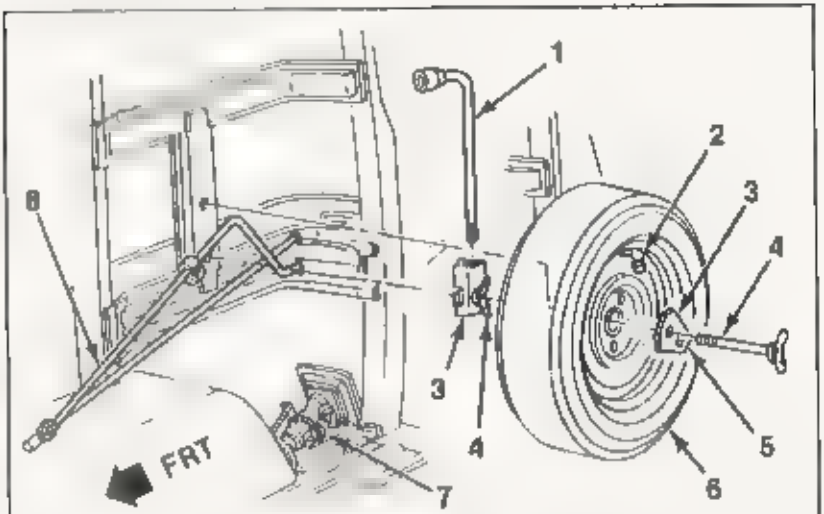
CAUTION: To help avoid personal injury and property damage if a wheel must be changed, obtain expert tire service if you can. If you must remove the wheel without such help, do as follows:

- **Take off the tire and rim assembly and install the spare wheel and tire assembly following the instructions in this section.**
- **Never add air to your tires unless an accurate gage is also used. Do not put air back in a tire that has been run flat, or is seriously low on air, without first having the tire taken off the wheel and the tire checked for damage. In choosing the right tire pressure, be careful not to go past the maximum pressure capability shown on the tire.**

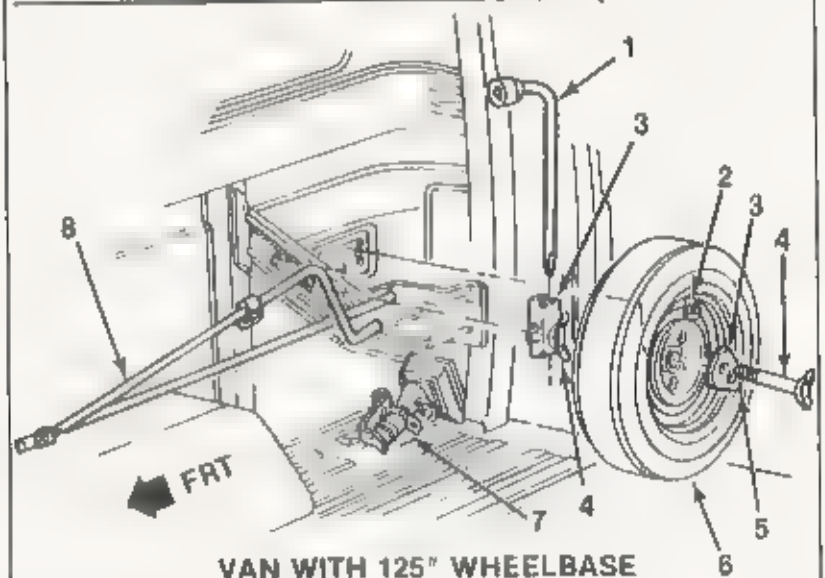
STORAGE OF TIRE AND JACK

CAUTION Always securely store the spare tire assembly (or flat tire), all jacking equipment, and any covers or doors, using the means provided. This will help keep such things from being thrown about and injuring people during a collision or sudden maneuver.





VAN WITH 110" WHEELBASE

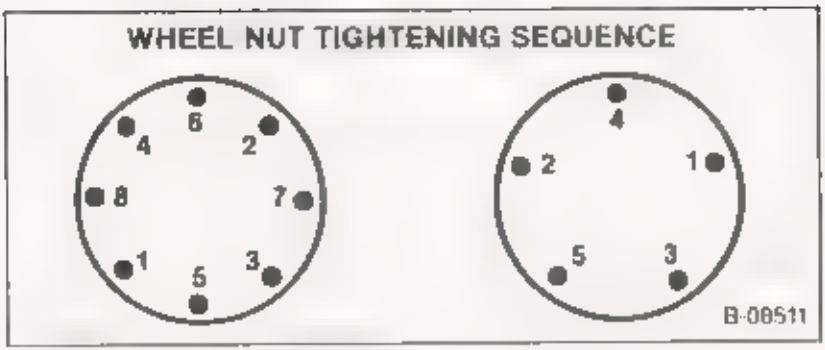


VAN WITH 125" WHEELBASE

1. Wheel Wrench
2. Valve Inboard
3. Retainer
4. Bolt
5. Insert Tab In Hole (G30)
6. Spare Tire
7. Jack
8. Jack Handle

F-01328

WHEEL NUT TORQUE



Refer to Section 6 for wheel nut torque values

CAUTION Never use oil or grease on studs or nuts. For both single and dual wheels, snug all wheel nuts and then tighten to the specified torque in the numerical sequence shown. Improperly tightened wheel nuts could eventually allow the wheel to come off while the vehicle is moving, possibly causing loss of control, personal injury and property damage.

As soon as possible after installing any wheel, have a technician tighten wheel nuts with a torque wrench to the torque specified in Section 6. In addition, for trucks with dual wheels, when the truck, wheel or fasteners are new, also have the torque set at the first 100, 1 000, and 6,000 miles (160, 1 500, and 9 600 kilometers). This is necessary because the clamping system used on this type of wheel must seat before the fasteners will hold a uniform clamp load and remain fully tightened.

(Refer to the "Replacement Fasteners" Caution in Section 5 regarding the danger of mixing metric and customary fasteners. Also refer to the "Inspection and Rotation" Caution under "Tires" in the same section regarding the importance of obtaining good metal-to-metal contact.)

EMERGENCY (WRECKER) TOWING

CAUTION To help avoid personal injury or property damage during any towing of your vehicle, proper equipment and towing methods must be used During towing the steering must be unlocked, the transmission in neutral, and the parking brake released

If towing is necessary, contact any GM dealer or a professional tow truck service Any GM dealer has detailed towing instructions State (province in Canada) and local laws which apply to vehicles in tow must be followed

Do not tow your vehicle on all four wheels Severe damage to the automatic transmission may result if speed or distance limits are exceeded

FREEING VEHICLE FROM SAND, MUD, SNOW OR ICE

If your vehicle gets stuck in sand mud snow or ice, shift the transmission from a forward range to reverse in a repeat pattern (On manual transmission models, shift the transmission from First or Second to Reverse) Apply a light pressure to the accelerator pedal while the transmission is in gear Remove your foot from the accelerator while shifting Do not race the engine For best traction avoid spinning the wheels Incorrect rocking of your vehicle while it is stuck may result in damage to vehicle components

CAUTION Do not spin the wheels faster than 35 mph (55 km/h). Personal injury and damage (including tire, vehicle body parts, transmission and/or rear axle failure) may result from excessive wheel spinning.

If the vehicle remains stuck after several rocking attempts, seek other assistance Also refer to the Notice under "Automatic Transmissions" in Section 2

EXTENDED VEHICLE STORAGE

If you plan to store your vehicle over an extended period of time, certain steps should be taken to give it maximum protection It is recommended that you write the Customer Assistance Department, Chevrolet Motor Division, PO Box 7047 Troy Michigan 48007 (In Canada write to General Motors of Canada Limited Customer Services Department Oshawa Ontario L1J 5Z6) for detailed instructions on how to prepare your vehicle for storage

SECTION 4
APPEARANCE CARE

CLEANING AGENTS

CAUTION: Follow the manufacturer's advice whenever cleaning agents or other chemicals are used, inside or outside the vehicle. Some cleaners may be poisonous or flammable, and improper use may cause personal injury or damage. When cleaning the inside or outside of the vehicle, do not use volatile cleaning solvents such as acetone, lacquer thinners, enamel reducers, nail polish removers, or such cleaning materials as laundry soaps, bleaches or reducing agents, except as noted in the fabric cleaning advice on stain removal which follows. Never use carbon tetrachloride, gasoline, benzene, or naptha for any cleaning purpose.

Open all vehicle doors for ventilation when any cleaning agents or other chemicals are used in the interior. Overexposure to some vapors may result in a health problem which is more likely to occur in small, unventilated spaces.

NOTICE: To avoid possible permanent discoloration of light colored seats, do not let materials with non-fast colors come in contact with seat trim materials until these materials are totally dry. This includes certain types of casual clothing, such as colored denims, corduroys, leathers and suedes, also decorative paper, etc.

CARE AND CLEANING OF THE INTERIOR

With the use of modern trim materials, it is very important that you use proper cleaning techniques and cleaners. Failing to do this on the first cleaning may result in water spots, spot rings, or setting of stains or soilage all of which are more difficult to remove in a second cleaning.

Dust and loose dirt that collect on interior fabrics should be removed often with a vacuum cleaner or soft bristle brush. Wipe vinyl or leather trim regularly with a clean damp cloth. Normal trim soilage, spots, or stains can be cleaned with these GM cleaners:

DESCRIPTION	PART NO.
GM Spot Lifter (Solvent Type)	
8 oz. (0.237 L)	1051398
GM Multi-Purpose Powdered Cleaner (Foam Type)	
6 lb. (2.72 kg)	1050429

The preceding products are excellent cleaners when used properly. They are available through your GM dealer.

Remember These Basic Steps Before Cleaning:

1. Remove stains as quickly as possible before they become set.
2. Use a clean cloth or sponge and change to a clean area often. A soft brush may be used if stains persist.
3. Use solvent type cleaners only in a well ventilated area, also do not saturate the stained area.
4. If cleaning forms after spot cleaning, clean the entire area immediately.
5. Follow specific instructions on cleaner labels.

CLEANING GENERAL SOILAGE OR WATER SPOTS FROM FABRIC TYPE TRIM (INCLUDING FLEECE AND PIGSKIN SUEDE LEATHER) WITH FOAM TYPE CLEANER

GM Multi-Purpose Powdered Cleaner is excellent for this type of cleaning and for cleaning panel sections where small cleaning rings may be left from spot cleaning.

- Vacuum and brush the area to remove any loose dirt.
- Always clean a whole trim panel or section. Mask surrounding trim along stitch or welt lines.
- Mix Multi-Purpose Powdered Cleaner following the directions on the container label. Mix in proportion for smaller quantities.
- Use suds on a clean sponge. Do not brush wet suede. Do not saturate the material or rub it harshly. Immediately after cleaning, remove suds with a sponge and rinse with a clean, wet sponge. Wipe off remaining residue with a slightly damp absorbent towel or cloth.
- Immediately after wiping, force-dry the material with an air hose. A heat dryer or heat lamp may be used. Use care with a heat dryer or lamp to help prevent damage.
- When trim materials with a sheen or suede finish are dry, wipe the fabric lightly with a soft, dry, clean cloth to restore its sheen or luster. For suede, raise nap with dry scrub brush and vacuum to remove any final traces of residue.

SPOT CLEANING FABRIC TYPE TRIM (EXCEPT PIGSKIN SUEDE LEATHER) WITH SOLVENT TYPE CLEANER

Before trying to remove a spot or stain from fabric, try to find out the type and age of the spot or stain. Some spots or stains can be removed with water or a mild soap solution (see "Removal of Specific Stains"). Spots or stains should always be removed as soon as possible.

Some types of stains or soilage, such as lipstick, inks and grease, are very difficult (sometimes impossible) to completely remove. When cleaning this type of stain or soilage, be sure not to enlarge the soiled area.

GM Fabric Cleaner (Solvent Type) is excellent for spot cleaning grease, oil, or fat stains.

NOTICE: Solvent type cleaners must not be used on pigskin suede leather. Damage to the material may result from such use.

- Gently scrape excess stain from the trim material with a clean dull knife or scraper. Use very little cleaner, light pressure and clean cloths (preferably cheesecloth). Cleaning should start at the outside of the stain (feathering) towards the center. Keep changing to a clean section of cloth.
- When you clean a stain from fabric, immediately dry the area with an air hose, heat dryer or heat lamp to help prevent a cleaning ring. (Use caution with heat dryer or lamp to help prevent fabric damage.)
- If a ring forms, immediately repeat the cleaning operation over a slightly larger area with emphasis on feathering towards its center. If a ring still remains, mask off surrounding trim sections and clean the entire area with GM Multi-Purpose Powdered Cleaner as described under "Cleaning General Soilage or Water Spots from Fabric Type Trim with Foam-Type Cleaner".)

REMOVAL OF SPECIFIC STAINS (EXCEPT FROM PIGSKIN SUEDE LEATHER)

Grease Or Oily Stains

Includes grease, oil, butter, margarine, shoe polish, coffee with cream, chewing gum, cosmetic creams, vegetable oils, wax crayon, tar and asphalts.

- Carefully scrape off excess stain, then use GM Fabric Cleaner (Solvent Type) as previously described.
- Shoe polish, wax crayons, tar and asphalts will stain if left on trim. They should be removed as soon as possible. Use care as cleaner will dissolve them and may cause them to "bleed."

Non-Greasy Stains

Includes catsup, coffee (black), egg, fruit, fruit juice, milk, soft drinks, wine, vomit and blood.

- Carefully scrape off excess stain, then sponge the stain with cool water.
- If a stain remains, use Multi-Purpose Powdered Cleaner (Foam Type) as previously described.
- If an odor lingers after cleaning vomit or urine, treat the area with a water/baking soda solution. 5 milliliters (1 teaspoon) of baking soda to 250 milliliters (1 cup) of luke warm water.
- Finally, if needed, clean lightly with Fabric Cleaner (Solvent Type).

Combination Stains

Includes candy, ice cream, mayonnaise, chili sauce and unknown stains.

- Carefully scrape off excess stain, then clean with cool water and allow to dry.
- If a stain remains, clean it with Fabric Cleaner (Solvent Type).

REMOVAL OF SPECIFIC STAINS FROM PIGSKIN SUEDE LEATHER

For the removal of all grease or oil based stains, as well as all general stains on pigskin suede leather, GM recommends the use of a qualified professional cleaner who has been trained to care for suede leather.

CLEANING VINYL OR LEATHER (EXCEPT PIGSKIN SUEDE LEATHER) TRIM

Ordinary soilage can be removed from vinyl or leather with warm water and mild soap or dish soap or an equivalent.

- Apply a small amount of soap solution and let it soak for a few minutes to loosen dirt, then rub briskly with a clean, damp cloth to remove dirt and traces of soap. This may be repeated several times if needed.
- Soilage such as tars, asphalts, shoe polish, etc. will stain if left on trim. They should be wiped off as quickly as possible and the area cleaned with a clean cloth dampened with GM Vinyl/Leather Cleaner (Solvent Type).

SAFETY BELT CARE

- Keep belts clean and dry.
- Clean lap belts only with mild soap and lukewarm water.
- Do not bleach or dye belts since this may severely weaken them.

GLASS SURFACES

Glass surfaces should be cleaned on a regular basis. Use of GM Glass Cleaner or a liquid household glass cleaner will remove normal tobacco smoke and dust films sometimes caused by ingredients used in vinyls and interior plastics.

Never use abrasive cleaners on any vehicle glass as they may cause scratches. If abrasive cleaners are used on the inside of the rear window, any electric defogger element may be damaged. Avoid placing decals on the inside rear window, since they may have to be scraped off later. Any temporary license, etc., should not be attached across the defogger grid.

Cleaning The Outside Of Windshield

If your windshield is not clear after using the windshield washer or if the wiper blade chatters when running, wax or other material may be on the blade or windshield.

Clean the outside of the windshield with Bon-Ami, a non abrasive cleaner. Your windshield is clean if beads do not form when rinsing with water.

Clean the blade by wiping with a cloth soaked in a solution of one-half water and one-half GM Optikleen. A solution of one-half water and one-half methanol alcohol may also be used. Then rinse the blade with water.

CARE AND CLEANING OF THE EXTERIOR

EXTERIOR FINISH

The paint finish on your vehicle provides beauty, depth of color, gloss retention and durability.

Washing Your Vehicle

The best way to preserve your vehicle's finish is to keep it clean by frequent washings. Wash the vehicle in lukewarm or cold water.

Do not use hot water or wash your vehicle in the direct rays of the sun. Do not use strong soap or chemical detergents. All cleaning agents should be flushed promptly from the surface and not allowed to dry on the finish.

GM vehicles are designed to operate under normal environmental conditions to withstand the natural elements. However, unusual conditions, such as high pressure car washes, may cause water to enter inside the vehicle.

Polishing And Waxing

Period polishing and waxing is recommended to remove surface residue from your paint finish. GM approved products are supplied through your authorized GM dealer.

PROTECTING EXTERIOR BRIGHT METAL PARTS

Bright metal parts should be cleaned regularly to keep their luster. Washing with water is all that is usually needed. However, you may use GM Chrome Polish on chrome or stainless steel trim, if necessary.

Use special care with aluminum trim. To avoid damaging protective trim, never use auto or chrome polish, steam or caustic soap to clean aluminum. A coating of wax, rubbed to a high polish, is recommended for all bright metal parts.

Cleaning Aluminum Wheels, Rally Wheels, and Wheel Covers

Preserve the original appearance of wheels or wheel covers by keeping them clean and free from build up of road dirt and/or road salt. Regular cleaning is recommended. Do not use abrasive cleaners or cleaning brushes, as they could damage the finish.

NOTICE: The protective coating or paint on your wheels or wheel trim is similar to the paint surface of your vehicle.

Hard silicon carbide rotating brushes are being used at some car washes. These brushes, used to clean whitewalls, may remove the protective coating from aluminum wheels, scratch painted surfaces on rally wheels, or scratch wheel covers. Tracks used to guide the vehicle through some car washes may also cause damage to your wheels or wheel trim.

Before entering a car wash, check with the manager to see that adequate care has been taken to protect your wheels.

CLEANING WHITE SIDEWALL TIRES

Use GM White Sidewall Tire Cleaner or a tire cleaner which will not harm aluminum wheel trim. A stiff brush may be used with the cleaner.

WEATHER STRIP LUBRICATION

Silicone grease application will lengthen weather strip life, help sealing and assist in eliminating squeaks. At least every six months, all weather strips should be lubricated with a silicone-grease lubricant Part No. 1052863, or equivalent. A thin film of silicone grease lubricant should be applied using a clean cloth.

CORROSION PROTECTION

Your vehicle was designed to resist corrosion. Special materials and protective coatings were used on most parts of your vehicle when it was built to help maintain the original appearance, strength and reliable operation. Some parts which normally are not visible, such as certain parts located in the engine compartment and the underbody of the vehicle, are such that surface corrosion will not affect their reliability. Therefore, corrosion protection is not needed or used on these parts.

In addition, the application of after-manufacture rustproofing is not necessary or required under the 6 year/100,000 mile Corrosion coverage (which is detailed in your Warranty and Owner Assistance Information booklet). In fact, some after-manufacture rustproofing may create a moist environment which reduces the corrosion resistance designed into your vehicle. Depending upon application technique, some after-manufacture rustproofing could result in damage or failure of some electrical or mechanical systems of your vehicle. Accordingly, repairs to correct damage or malfunctions caused by after-manufacture rustproofing are not covered under any of your GM New Vehicle Warranties.

Sheet Metal Damage

If your vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to the parts repaired or replaced so that corrosion protection is restored. (Also refer to "Finish Damage," which follows.)

Foreign Material Deposits

Calcium chloride and other salts (ice melting agents), road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, and other foreign matter may damage vehicle finishes if left on painted surfaces.

Prompt washing may not completely remove all of these deposits. Other cleaners may be needed. When using chemical cleaners, be sure they are safe for use on painted surfaces.

Finish Damage

Any stone chips, factory-caused deep scratches, or other finish damage should be repaired promptly. Bare metal will corrode quickly and may develop into a major repair expense.

Minor chips and scratches can be repaired with touch-up materials available from your GM dealer or other service outlets. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

Underbody Maintenance

Corrosive materials used for ice and snow removal and dust control can collect on the underbody. If these materials are not removed, accelerated corrosion (rust) can occur on underbody parts such as fuel tanks, frames, floor pan, and exhaust system, even though they have been provided with corrosion protection.

At least every spring, flush these materials from the underbody with plain water. Take care to clean well any areas where mud and other debris can collect. Sediment packed in closed areas of the frame should be loosened before being flushed. If desired, your GM dealer can do this service for you.

NOTICE TO NEW GM OWNERS REGARDING CHEMICAL PAINT SPOTTING

GM believes that certain weather and atmospheric conditions may create a chemical fallout whereby certain airborne pollutants fall upon and attack vehicle paints. Occurrences have taken place primarily in the northeastern seaboard area. The paint damage takes two forms: blotchy ringlet-shaped discolorations, and small irregular dark spots etched into the paint surface.

Paint spotting as a result of the fallout is not related to a defect in paint materials or workmanship. For this reason, claims arising from this condition are not considered to be warranty related. Nevertheless, because GM shares the pride which our owners take in preserving and maintaining the appearance of their vehicles, GM has authorized its dealers to repair at no charge to the owner, the surfaces of new vehicles damaged by this fallout condition within 12 months or 12,000 miles (20,000 km) of purchase, whichever comes first.

APPEARANCE CARE AND MAINTENANCE MATERIALS

PART NUMBER	SIZE	DESCRIPTION	USAGE
1051516	0.946 L (32 oz.)	Washer Solvent & Gas Line Deicer	Windshield washing system and gasoline
050017	0.946 L (32 oz.)	Power Steering Fluid	Power Steering Fluid
1052277	0.354 L (12 oz.)	Spray-A-Squeak	Weather Strips-stops squeaks caused by metal to-metal and metal to-rubber contact
1050172	0.473 L (16 oz.)	Tar and Road Oil Remover	Removes old waxes, polishes, tar and road oil
1050173	0.473 L (16 oz.)	Chrome Cleaner and Polish	Removes rust and corrosion on chrome and stainless steel
1050174	0.473 L (16 oz.)	White Sidewall Tire Cleaner	Cleans white and black tires
1050214	0.946 L (32 oz.)	Vinyl/Leather Cleaner	Spot and stain removal on leather or vinyl

APPEARANCE CARE AND MAINTENANCE MATERIALS (CONT.)

PART NUMBER	SIZE	DESCRIPTION	USAGE
*1050244	0.473 L (16 oz.)	Fabric Cleaner	Spot and stain remova on cloth and fabric
1052627	0.354 L (12 oz.)	Heat Valve Lubrication	Free up stuck heat risers general purpose penetrant
1050427	0.680 L (23 oz.)	Glass Cleaner	Glass cleaning and spot cleaning on vinyls
1050429	2.72 kg (6 lbs.)	Multi-Purpose Powdered Cleaner	Cleans vinyl and cloth on door trim, seats, and carpet also tires and mats
1052349	0.340 kg (12 oz.)	Lubriplate (White Grease)	Grease for hood and door hinges and latches
1050729	0.237L (8 oz.)	Vinyl Top Cleaner	Cleaning of vinyl tops
1052863	0.028 kg (1 oz.)	Silicone Grease	Weatherstripping
1051055	0.473L (16 oz.)	Preservatone	Vinyl top dressing
*1051398	0.237 L (8 oz.)	Spot Lifter	Spot and stain removal on cloth and fabric
1051515	0.946 L (32 oz.)	GM Optikleen	Windshield washer solvent and anti-freeze
105 855	0.946 L (32 oz.)	Dexron® II	Automatic Transmissions and Some Manual Transmissions (5 speed)†
052367	0.473 L (16 oz.)	GM Engine Oil Supplement (E.O.S.)	See your Dealer for specific usage
1052753	3.785 L (1 gal.)	Permanent Type Anti-Freeze Coolant (Ethylene Glycol Base)	Year round coolant and anti-freeze

APPEARANCE CARE AND MAINTENANCE MATERIALS (CONT.)

PART NUMBER	SIZE	DESCRIPTION	USAGE
1052271	0.680 L (23 oz.)	GM Gear Lubricant	Rear Axle Lubricant
1052535	0.473 L (16 oz.)	Delco-Supreme II Brake Fluid	Brake fluid
1052870	0.473L (16 oz.)	Wash-Wax (conc.)	Exterior wash
1050201	0.473L (16 oz.)	Magic Mirror Cleaner-Polish	Exterior cleaner and polish
1052277	0.354L (12 oz.)	Silicone Lubricant	Key Lock Cylinder lubricant. For black key lock cylinders, use a light oil

* Not Recommended for Pigskin Leather
† Refer to your Maintenance Schedule booklet

For continuing satisfaction keep your vehicle at GM General Motors parts are identified by one of these trademarks

SECTION 5
SERVICE AND MAINTENANCE

Your GM dealer has factory trained technicians and Genuine GM Parts to service your vehicle properly. For expert advice and quality service, see your GM dealer.

OWNER MAINTENANCE

CAUTION: To help avoid personal injury, take care when doing any maintenance or making any check or repair. Follow manufacturer's instructions for all materials used during service and maintenance of this vehicle. If used or handled improperly, they may be hazardous. Improper or incomplete service can also affect the vehicle which may in turn result in personal injury or damage to the vehicle or its equipment. If you have any question about carrying out some service, have the work done by a skilled technician.

NOISE CONTROL SYSTEM

The following information relates to compliance with Federal noise emission standards for vehicles with a Gross Vehicle Weight Rating (GVWR) of more than 4 536 kilograms (10,000 pounds). The Maintenance Schedule booklet provides information on maintaining the noise control system to minimize degradation of the noise emission control system during the life of your vehicle. The noise control system warranty is given in your Warranty booklet.

These standards apply only to vehicles sold in the United States.

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Federal law prohibits the following acts or the causing thereof:

1. The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control, prior to its sale or delivery to the ultimate purchaser or while it is in use, or
2. The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

Insulation:

- Removal of noise shields or underhood insulation.

Engine

- Removal or rendering engine speed governor if so equipped inoperative so as to allow engine speed to exceed manufacturer specifications

Fan And Drive

- Removal of fan clutch if so equipped or rendering clutch inoperative
- Removal of fan shroud, if so equipped

Air Intake

- Removal of air cleaner silencer
- Reversing air cleaner cover

Exhaust

- Removal of muffler and/or resonator
- Removal of exhaust pipes and exhaust pipe clamps

DIESEL ENGINE SERVICE

NOTICE Your diesel engine is not the same as diesel engines used in heavy trucks or farm equipment. Do not attempt any service or repair if you have any questions about performing it. Your dealer knows your vehicle best and can answer any questions you may have about service.

DIESEL ENGINE CLEANING

NOTICE Your diesel engine does not need periodic cleaning, nor does GM recommend it be cleaned. However, if you insist on cleaning the engine, clean it only when it is cold, never when it is warm or hot, and never when the engine is running. Spraying or pouring water or other fluids on your engine when it is warm or hot, or when it is running, can cause serious damage to the engine and its components.

REPLACEMENT FASTENERS

During vehicle maintenance, any fasteners used to replace older ones must have the same measurements and strength as those removed, whether metric or customary. (The numbers on the heads of metric bolts and on the surfaces of metric nuts show their strength. Customary bolts use radial lines to show this, while most customary nuts do not have strength markings.) Fasteners taken from the vehicle should be saved for re-use in the same spot when possible. Where a fastener cannot be used again, take

care to choose a replacement that matches the old one. For information and help, see your GM dealer.

CAUTION: This vehicle has some parts dimensioned in the metric system as well as in the customary system. Some fasteners are metric and are very close in dimension to well-known customary fasteners in the inch system. Mismatched or incorrect fasteners can result in damage to the vehicle or possible personal injury.

MAINTENANCE SCHEDULE

For owner convenience, a separate booklet has been provided with your vehicle which outlines the maintenance your vehicle requires. The Maintenance Schedule booklet is supplemented by this section of the Owner's Manual.

Read this schedule for a full understanding of your vehicle's maintenance needs. If you need a replacement Maintenance Schedule, see your dealer or contact the Customer Assistance Department, Chevrolet Motor Division, P.O. Box 7047, Troy, Michigan 48007. (In Canada, contact the Customer Services Representative, General Motors of Canada Ltd., Oshawa, Ontario, L1J 5Z6).

FUEL CAP

The fuel tank filler cap is a "screw-on ratcheting type" and is behind a hinged door on the left rear quarter panel.

The fuel tank filler cap has a "screw-on ratcheting type" feature.

- To remove: rotate cap counterclockwise to clear the inside of the filler neck. This will allow any residual pressure to escape.
- To install: reverse this procedure and tighten cap securely until a ratcheting clicking sound is heard indicating cap is on properly.

CAUTION: Fuel may be under pressure. Remove fuel cap slowly to prevent fuel from spraying out and causing injury.

NOTICE: If you need to replace the fuel cap, use only a cap specified for your model. An incorrect fuel cap can result in a serious malfunction of the fuel system or emission control system. You can get a correct replacement cap from your GM dealer.

CATALYTIC CONVERTER (GASOLINE ENGINES ONLY)

The catalytic converter on your Light Duty Emission Class Vehicle (refer to chart in Section 6) is an emission control device added to the exhaust system to reduce exhaust gas pollutants. The converter contains a ceramic material coated with noble metal catalysts. To prevent contamination and loss of effectiveness of the catalysts unleaded fuel must be used. Unleaded fuel also reduces spark plug fouling, exhaust system corrosion and engine deterioration. Leaded fuel will also damage the oxygen sensor in the Computer Command Control system which could affect emission control.

To help prevent damage:

1. Keep your engine properly maintained. Engine malfunctions involving the electrical, carburetion, electronic fuel injection or ignition systems may result in unusually high catalytic converter and exhaust system temperatures which, under extreme malfunctioning conditions, may ignite interior floor-covering materials above the converter. Do not keep driving your vehicle if you detect engine misfire, noticeable loss of performance, or other unusual operating conditions. Instead, have it serviced promptly. Refer to the Maintenance Schedule booklet for information on inspecting and maintaining the engine exhaust system and other components.
2. Do not push or tow this vehicle to start it. This may result in unusually high catalytic converter and exhaust system temperatures which, under extreme conditions may ignite interior floor-covering material above the converter.

Disregarding these instructions could damage the catalytic converter, the vehicle or cause property and affect warranty coverage.

HEAVY DUTY EXHAUST SYSTEM (GASOLINE ENGINES ONLY)

To meet Federal regulations, Heavy Duty Emission Class Vehicles (refer to chart in Section 6) have an exhaust system made of special materials to withstand high exhaust system temperatures.

CAUTION: To help avoid fire, use only GM or equivalent heat shields and exhaust system parts. Do not operate engine without heat shields installed.

1. Keep your engine properly maintained. Engine malfunctions involving the electrical, carburetion or ignition systems may result in unusually high exhaust system temperatures which, under extreme malfunctioning conditions, may ignite interior floor covering materials above the exhaust system. Do not keep driving your vehicle if you detect engine misfire, noticeable loss of performance, or other unusual operating conditions. Instead, have it serviced promptly. Refer to the Maintenance

Schedule booklet for information on inspecting and maintaining the engine, exhaust system, and other components.

2. Do not push or tow this vehicle to start it. This may result in unusually high exhaust system temperatures which under extreme conditions may ignite interior floor-covering materials above the exhaust system.

Disregarding these instructions could damage the exhaust system, the vehicle, or nearby property and affect warranty coverage.

AIR INJECTION REACTION (A.I.R.) SYSTEM (VEHICLES WITH HEAVY DUTY EMISSIONS)

Heavy duty emissions gas engines have an Air Injection Reaction System with a "CHECK ENGINE" light.

This system has an Air Control Valve(s) that has an electric solenoid(s) to combine electronic control with normal diverter valve function. The solenoid(s) is energized through a control module. If there is need for service of the control module, wiring harness or solenoid(s), a CHECK ENGINE light will illuminate on the instrument panel.

"SERVICE ENGINE SOON LIGHT" OR "CHECK ENGINE" LIGHT

Vehicles with the Computer Command Control system include a "SERVICE ENGINE SOON" light. Gasoline engine vehicles with heavy duty emissions have an Air Injection Reaction system with a "CHECK ENGINE" light.

The "SERVICE ENGINE SOON" ("CHECK ENGINE") light on the instrument panel will indicate the need for system service. It will come on during engine starting to let you know the bulb is working. (The light will stay on a short time after the engine starts.) Have the system repaired if this light does not come during engine starting.

If the light comes on either intermittently or continuously while driving, service to the system is required. Although in most cases the vehicle is driveable and does not require towing, see your GM dealer as soon as possible for service of the system.

Continued driving without having the system serviced could cause damage to the emission control system.

Refer to "A.I.R. System (Vehicles With Heavy Duty Emissions)" and "Computer Command Control System" in this section.

To determine whether your vehicle is a light duty or heavy duty emissions vehicle, refer to "Engine Identification" in Section 6.

THE COMPUTER COMMAND CONTROL SYSTEM

All gasoline engine vehicles below 10,000 lbs. and diesel engine vehicles below 8,500 lbs. GVWR have the Computer Command Control system.

GASOLINE ENGINE VEHICLES

The Computer Command Control system monitors the exhaust stream with an oxygen sensor. Based on sensor signals, the electronic control module adjusts the air-fuel ratio as needed. It is very important to use only

unleaded gasoline in vehicles equipped with the Computer Command Control system. Leaded gasoline will damage the oxygen sensor and may affect emission control and drivability.

DIESEL ENGINE VEHICLES RATED BELOW 8500 LBS. GVWR

The Computer Command Control system monitors engine speed and throttle position to adjust exhaust gas recirculation in order to limit exhaust emissions.

AIR CLEANER — FLAME ARRESTOR

CAUTION: The air cleaner also functions as a flame arrestor in the event of engine backfire. The air cleaner should be installed at all times unless its removal is necessary for repair or maintenance. To help reduce the risk of personal injury and property damage, be sure that no one is near the engine compartment before starting the engine with the air cleaner removed. If engine backfire occurs with the air cleaner removed, there could be a burst of flame and possible other fire in the engine compartment.

On vehicles with diesel engines, do not use starting fluids — immediate engine damage can result. Also take care not to let objects fall into the engine if the air cleaner is removed. If the engine is running, suction can pull loose objects into the engine. Objects pulled or dropped into the engine can cause costly engine damage.

When replacement of air cleaner filter element is necessary, an AC air filter element is recommended.

Refer to your Maintenance Schedule for change intervals. Operation of vehicle in dusty areas will necessitate more frequent replacement. Your dealer can be of assistance in determining the proper replacement frequency for the conditions under which you operate your vehicle.

ENGINE OIL AND FILTER RECOMMENDATIONS (GASOLINE ENGINES)

The following engine oil recommendations are based upon the operation of your engine with the fuels recommended under "Fuel Requirements" in Section 2 of this manual.

CHECKING OIL LEVEL (GASOLINE ENGINES)

The engine oil must be kept at the right level to help assure proper lubrication of your vehicle's engine. It is normal for an engine to use some oil, and some engines may use more oil when they are new. It is the owner's responsibility to check the oil level at regular intervals (such as every fuel stop), according to the following instructions:

- The best time to check the engine oil level is when the oil is warm, such as during a fuel stop. After stopping the engine, wait a few minutes for the oil to drain back to the oil pan. Then, pull out the dipstick located in the front of the engine compartment, above the fan shroud. Wipe it clean, and push the dipstick back down all the way. Now, pull out the dipstick and look at the oil level on it.

Add oil, if needed, to keep the oil level above the "ADD" line. Avoid overfilling the engine since this may cause engine damage. Push the dipstick back down all the way after taking the reading.

- If you check the oil level when the oil is cold, do not run the engine first. The cold oil will not drain back to the pan fast enough to give a true oil level.

CHOOSING THE RIGHT QUALITY OIL (GASOLINE ENGINES)

Engine oils are labeled on the containers with various API (American Petroleum Institute) designations of quality. General Motors recommends that you use GM Goodwrench Motor Oil (or in Canada, GM Engine Oil) or an equivalent product identified with the correct API quality service designations. The recommended oil quality for your vehicle is as follows:

API Service Designations of Quality

USE ONLY

SF/CC SF/CD

Additional designations of quality may also be present, BUT both SF and CC, or both SF and CD, must be included. These designations may be shown alone, such as "SF", "CC", or "CD", or combinations separated by commas, slashes, or dashes, such as "SF/CC," "SF-CC, CD," or "SE SF CC". Use of oils without the recommended designations may cause engine damage which is not covered by the new vehicle warranty.

ENERGY CONSERVING OILS (GASOLINE ENGINES)

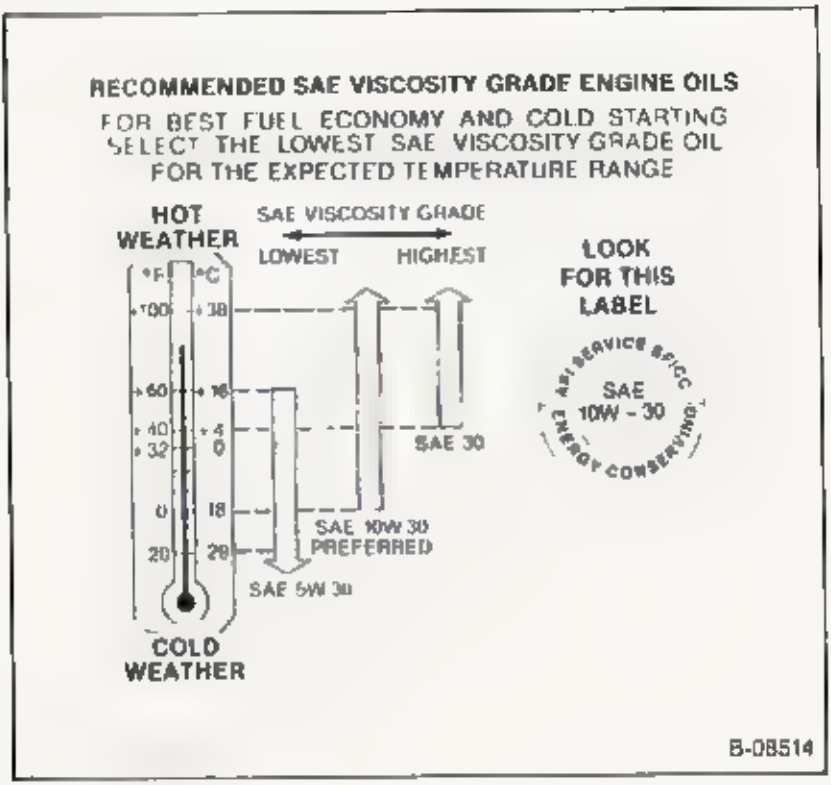
It is recommended that you select an oil not only of the proper quality and viscosity, but also a fuel-saving product. These oils can be found in dealer service departments, service stations and other retail stores. They are identified by words such as "Energy Conserving," "Energy Saving," "Conserves Gasoline," "Gas Saving," "Gasoline Saving," "Friction Reducing," "Improved Gasoline Mileage," "Improved Fuel Economy," "Saves Fuel" or "Fuel Saving."

CHOOSING OIL VISCOSITY (GASOLINE ENGINES)

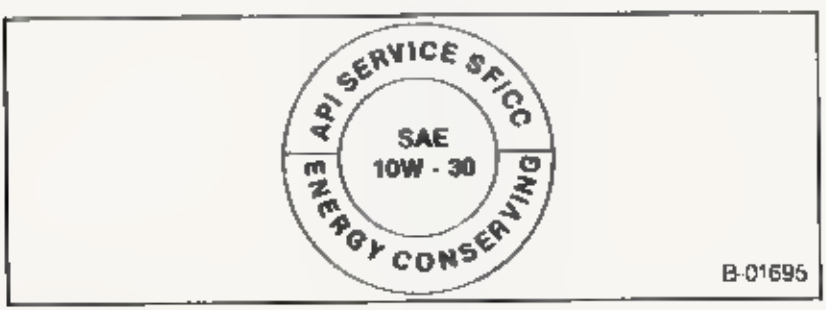
Engine oil viscosity (thickness) has an effect on fuel economy and cold-weather operation (starting and oil flow). Lower viscosity engine oils can provide better fuel economy and cold weather performance; however, higher temperature weather conditions require higher viscosity engine oils for satisfactory lubrication. Using oils of any viscosity other than those viscosities recommended could result in engine damage.

When choosing an oil, consider the range of temperature your vehicle will be operated in before the next oil change. Then, select the recommended oil viscosity from the following chart. If outside temperatures are expected to be above 0°F (-18°C) prior to your next oil change, SF/CC quality SAE 10W-30 Energy-Conserving engine oil is the preferred engine oil for your vehicle. However, to improve cold-starting performance, an SF/CC quality

SAE 5W-30, energy-conserving engine oil may be used if the outside temperature does not exceed 60°F (16°C), and should be used if the temperature is below 0°F (-18°C)



OIL IDENTIFICATION LOGO (GASOLINE ENGINES)



A logo (symbol) is used on most oil containers to help you select the oi you should use. The top portion of the logo shows the oil quality by AP designations such as SF/CC, SF/CD or others. The center portion of the

logo shows the SAE viscosity grade such as SAE 10W-30. Energy Conserving, shown in the lower portion indicates that the oil has fuel-saving capabilities.

CHANGE INTERVALS (GASOLINE ENGINES)

The oil and oil filter change intervals for your engine are based on the use of the recommended oil quality and viscosity as well as high quality filters such as AC oil filters. Using oil other than recommended or oil and filter change intervals longer than recommended could reduce engine life. Damage to engines due to improper maintenance or use of incorrect oil quality and/or viscosity is not covered by the GM new vehicle warranties.

Your engine was filled with a high-quality engine oil when it was built. You do not have to change this oil before the first recommended change interval.

Oil and filter change intervals depend upon how you use your vehicle. Refer to oil change intervals chart to determine the proper oil and filter change intervals.

RECOMMENDED OIL CHANGE INTERVALS — GASOLINE ENGINES (VEHICLES WITH LIGHT DUTY EMISSION)

TYPE OF USE	CHANGE INTERVALS
SCHEDULE 1	
Follow Schedule 1 if your vehicle is mainly operated under one or more of the following conditions: • When most trips are less than 4 miles (6 kilometers) • When most trips are less than 10 miles (16 kilometers) and outside temperatures remain below freezing • Towing a trailer • Operating in dusty areas • Idling and/or low speed operation in stop-and-go traffic *	• Change oil and filter every 3,000 miles (5,000 kilometers) or 3 months, whichever comes first. * Schedule 1 should also be followed if the vehicle is used for delivery service, police, taxi or other commercial applications.
SCHEDULE 2	
• Follow Schedule 2 only if none of the above conditions apply.	• Change oil every 7,500 miles (12,500 kilometers) or 12 months, whichever comes first. Change engine oil filter at first oil change, then every other oil change. If mileage determines when you change oil. If time determines change intervals, change the filter with each oil change. F-05192

RECOMMENDED OIL CHANGE INTERVALS – GASOLINE ENGINE (VEHICLES WITH HEAVY DUTY EMISSIONS)

TYPE OF USE	CHANGE INTERVALS
SCHEDULE 1	
Follow Schedule 1 if your vehicle is mainly operated under one or more of the following conditions: • When most trips are less than 4 mile (6 kilometers). • When most trips are less than 10 miles (16 kilometers) and outside temperatures remain below freezing. • Idling and/or low speed operation in stop and go traffic.* • Towing a trailer • Operating in dusty areas. • Frequent long runs at high speeds and high ambient temperatures.	• Change engine oil and filter every 3,000 miles (5,000 kilometers) or 3 months whichever comes first. * Also follow Schedule 1 if the vehicle is used for delivery service, police, taxi, or other commercial applications.
SCHEDULE 2	
• Follow Schedule 2 only if none of the above conditions apply.	• Change engine oil every 6,000 miles (10,000 kilometers) or 12 months, whichever comes first. Change engine oil filter at first oil change, then every other oil change if mileage determines when you change oil. If time determines change intervals, change the filter with each oil change.

B-08507

ENGINE OIL ADDITIVES (GASOLINE ENGINES)

Engine oils contain a variety of additives. Your engine should not need any extra additives if you use the recommended oil quality and change intervals. However, if you think your engine has an oil-related problem, a

supplemental additive (" GM Engine Oil Supplement) is available that may solve your problem Supplemental engine oil additives should be used only for remedial purposes and not on a regular basis Consult your GM dealer who can provide you with this tested and approved additive

USED OIL DISPOSAL (GASOLINE ENGINES)

Do not dispose of used engine oil (or any other oil) in a careless manner such as pouring it on the ground into sewers or into streams or bodies of water Instead recycle it by taking it to a used oil collection facility which may be found in your area If you have a problem disposing of your used oil it is suggested that you contact your dealer or a service station

ENGINE OIL AND FILTER (DIESEL ENGINES)

The following engine oil recommendations are based on operating your engine with the fuels recommended under " Diesel Fuel Requirements and Fuel System " in Section 2 of this manual

NOTICE Engine damage due to improper maintenance or to using oil of the improper quality and/or viscosity is not covered by the new vehicle warranty

CHECKING OIL LEVEL (DIESEL ENGINES)

It is normal for an engine to use some oil In some engines it may use more oil when they are new The engine oil must be kept at the right level to help assure proper lubrication of your vehicle's engine It is the owner's responsibility to check the oil level at regular intervals (such as every fuel stop) according to the following instructions

- The best time to check the engine oil level is when the oil is warm such as during a fuel stop After stopping the engine wait a few minutes for the oil to drain back to the oil pan Then pull out the dipstick in the front of the engine compartment above the fan shroud Wipe the dipstick clean then push the dipstick back down all the way Now pull out the dipstick and look at the oil level on it
- Add oil if needed to keep the oil level above the " ADD " line Avoid overfilling the engine since this may cause engine damage Push the dipstick back down all the way after taking the reading
- If you check the oil level when the oil is cold do not run the engine first The cold oil will not drain back to the pan fast enough to give a true oil level

CHOOSING THE RIGHT QUALITY OIL (DIESEL ENGINES)

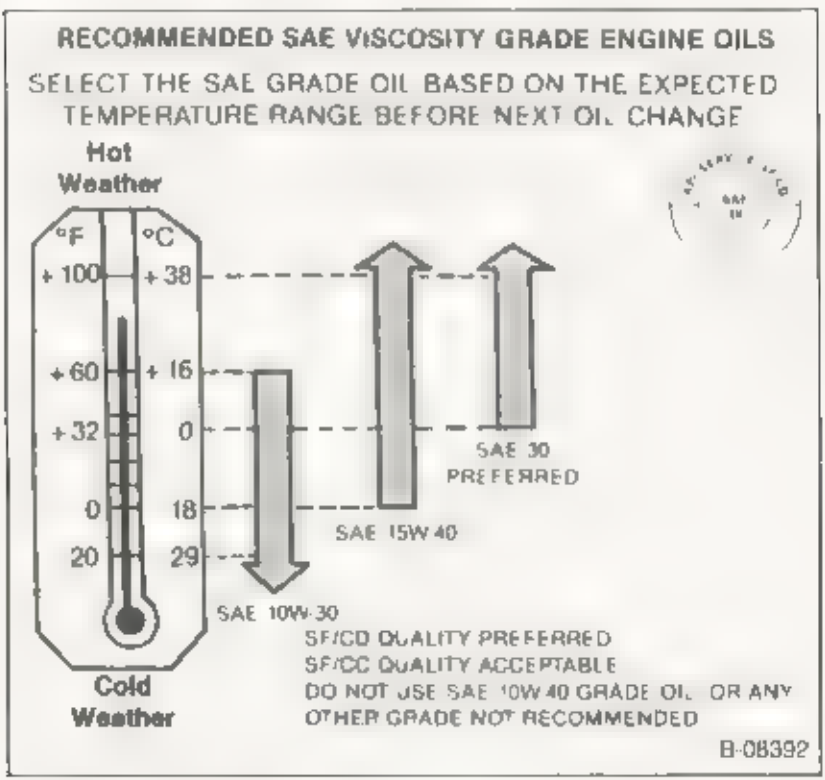
Engine oils are labeled on the containers with various API (American Petroleum Institute) service designations of quality General Motors recommends that you use GM Goodwrench Motor Oil (in Canada GM Engine Oil) or an equivalent product identified with the correct API quality

service designations. The recommended oil quality for your vehicle is as follows:

API Service Designations of Quality
USE ONLY
SF/CD
SF/CC

Additional designations of quality may also be present BUT both SF and CD (or better) and CC must be included. These designations may be shown alone (such as SF, CC, or CD) or combinations separated by hyphens, slashes or dashes such as SF/CC, SF-CC, or CD/SE, SF-CC. Use of oils without the recommended designations may cause engine damage which is not covered by the new vehicle warranty.

CHOOSING OIL VISCOSITY (DIESEL ENGINES)



Engine oil viscosity (thickness) has an effect on fuel economy and cold weather starting. Lower viscosity engine oils can provide better fuel economy, however higher temperature weather conditions require higher viscosity engine oils for satisfactory lubrication. Using oils of any viscosity other than those recommended could result in engine damage.

When choosing an oil, consider the range of temperature your vehicle will be operated in before the next oil change. Then select the recommended oil viscosity from the chart.

SAE 30 viscosity oil is preferred and should be used whenever possible (SAE 30 is also preferred for continuous duty driving.) When you expect the temperature to go below freezing (32°F (0°C) repeatedly before the next oil change, use only SAE 10W-30 or 15W-40 for improved oil flow and cold starting.

Do not use SAE 10W-40 or any other viscosity oil not recommended. Such oils could cause engine damage, and such damage is not covered by the new vehicle warranties.

OIL IDENTIFICATION LOGO (DIESEL ENGINES)

A logo (symbol) was added to some oil containers to help you select the oil you should use. The top portion of the logo shows the oil quality by API designations, such as SF/CC, SF/CD or others. The center portion of the logo shows the SAE viscosity grade, such as SAE 30.

ENGINE OIL ADDITIVES (DIESEL ENGINES)

Engine oils contain a variety of additives. Your engine should not need any extra additives if you use the recommended oil quality and change intervals. However, if you think your engine has an oil-related problem, a supplemental additive (GM Engine Oil Supplement) is available that may solve your problem. Supplemental engine oil additives should be used only for remedial purposes and not on a regular basis. Consult your dealer who can provide you with this tested and approved additive.

CHANGE INTERVALS (DIESEL ENGINES)

The oil and oil filter change intervals for your engine are based on the use of the recommended oil quality and viscosity, as well as high-quality filters such as AC oil filters. Using oil other than recommended, or oil and filter change intervals longer than recommended, could reduce engine life. Damage to engines due to improper maintenance or use of incorrect oil quality and/or viscosity is not covered by the new vehicle warranty.

Your engine was filled with a high-quality engine oil when it was built. You do not have to change this oil before the first recommended change interval.

Oil and filter change intervals depend on how you use your vehicle. The following should assist in determining the proper oil and filter change intervals.

RECOMMENDED OIL CHANGE INTERVALS (DIESEL ENGINES)

Type of Use	Change Interval
SCHEDULE I	
• Operating in dusty areas • Towing a trailer • Idling for extended periods and/or low speed operation • Operating when outside temperatures remain below freezing and when most trips are less than 4 miles (6 kilometers)	• Change engine oil and filter every 2,500 miles (4000 kilometers) or 3 months, whichever comes first
SCHEDULE II	
• When none of the above conditions apply and as a general rule the vehicle is driven daily for a — minimum of 15 miles (25 kilometers or more) — or continuously for 30 minutes or more	• Change oil and filter every 5,000 miles (8000 kilometers) or 12 months, whichever comes first

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USED OIL DISPOSAL (DIESEL ENGINES)

Do not dispose of used engine oil (or any other oil) in a careless manner such as pouring it on the ground, into sewers, or into streams or bodies of water. Instead, recycle it by taking it to a used oil collection facility which may be found in your community. If you have a problem disposing of your used oil, it is suggested that you contact your dealer or service station. This also applies to diesel fuel which is contaminated with water. Refer to "Diesel Fuel Requirements and Fuel System" in Section 2.

AUTOMATIC TRANSMISSION FLUID RECOMMENDATIONS

PROPER FLUID

Use only automatic transmission fluid labeled DEXRON® II.* You can buy this fluid from your dealer or other service outlets.

* Dexron® II is a trademark of General Motors.

CHECKING FLUID LEVEL

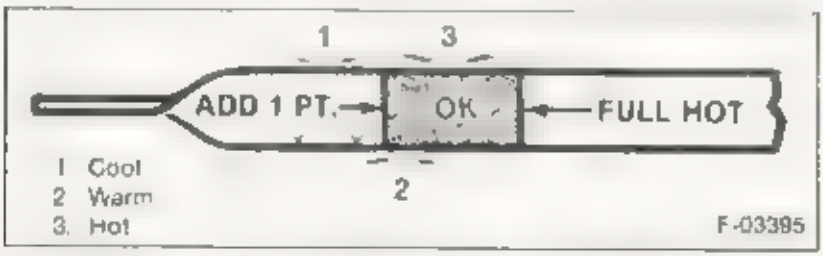
Check the automatic transmission fluid level at each engine oil change. Driving with too much or too little fluid can damage the transmission.

To check the fluid level, first set the parking brake, then start the engine in P (Park), and let idle for two minutes. You must check the fluid level with the engine running at slow idle and the vehicle level. Move the selector lever through each gear range, then position it in the P (Park) range.

You cannot read the correct fluid level if you have just driven the vehicle for a long time at high speed, in city traffic in hot weather, or if the vehicle has been pulling a trailer. Wait until the fluid cools down (about 30 minutes).

Remove the dipstick located at the front of the engine compartment above the fan shroud. Carefully touch the wet end of the dipstick to find out if the fluid is cool, warm or hot. Wipe it clean and push it back in until the cap seals. Pull out the dipstick and read the fluid level.

- If it felt cool (about room temperature), the level should be 3 to 10 millimeters (1/8 to 3/8 inch) below the ADD mark. The dipstick has two dimples below the ADD mark to show this range.
- If it felt warm, the level should be close to the ADD mark (either above or below).
- If it was too hot to hold, the level should be in the crosshatch area between the "ADD" and "FULL" marks.



Add just enough DEXRON II fluid to fill the transmission to the proper level. It takes only 0.5 liter (one pint) to raise the level from ADD to FULL with a hot transmission.

AUTOMATIC TRANSMISSION DRAIN INTERVALS

Change the transmission fluid and change the filter as outlined in the Maintenance Schedule booklet.

MANUAL TRANSMISSION FLUID RECOMMENDATIONS

Refer to the Maintenance Schedule booklet to find out how often the lubricant level should be checked and what type of lubricant should be used.

Add lubricant if needed to fill to the level of the filler plug hole.

MANUAL TRANSMISSION SHIFT LINKAGE

Lubricate linkage at the interval shown in the maintenance schedule with water resistant extreme pressure (E P) chassis lubricant which meets GM Specification 6031M

NOTICE The 3-speed and 4-speed transmissions have grease fitting provisions on the shifter assembly to allow for proper lubrication

CLUTCH LINKAGE ADJUSTMENT

The clutch linkage should be checked and adjusted periodically as necessary to compensate for clutch lacing wear To check press pedal by hand until resistance is felt Free travel should be approximately 25 to 38mm (1 to 1 1/2), if very little or no free travel is evident clutch adjustment is required

ENGINE COOLING SYSTEM

CAUTION If your cooling system overheats, see " Engine Cooling System Overheating " in Section 3 Continued operation of the engine even for a short time may result in a fire and the possibility of personal injury and/or severe vehicle damage

Your vehicle has a coolant recovery system Coolant in the system expands with heat and overflows into the recovery tank mounted on the right front corner near the front of the engine Upon the system cools coolant is drawn back into the radiator

The cooling system was filled at the factory with a quality coolant that meets GM specifications It is important to use proper coolant to prevent damage to cooling system components Coolants meeting GM Specification 1825 M or those specially formulated for aluminum component protection should be used The cooling system is designed to use coolant (a mixture of ethylene glycol corrosion inhibitors and water) rather than plain water alone The coolant solution must be used year round to provide

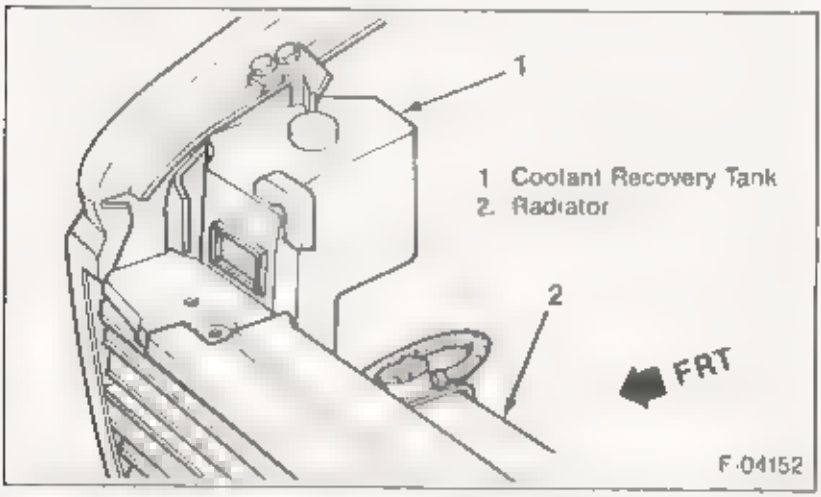
- freezing protection down to 29°C (-20°F) or 37°C (-34°F) in Canada or with RPO Z49
- boiling protection up to 125°C (258°F) or 129°C (248°F) with a diesel engine,
- protection against rust and corrosion in the cooling system
- the proper engine temperature for efficient operation and emission control and
- proper operation of the coolant temperature light or gage

Refer to the Maintenance Schedule booklet to find out when the coolant should be replaced Note that changing the coolant is needed to replenish the

rust and corrosion inhibitors to make certain that all parts of the cooling system work well.

COOLING SYSTEM CARE

Check the cooling system at regular intervals, such as during fuel stops. You usually do not need to remove the radiator cap to check the coolant level. Lift the engine hood and look at the coolant level in the see-through coolant recovery tank.



When the engine is cold, the coolant level should be at or slightly above the "FULL COLD" mark on the recovery tank. When the engine has fully warmed up, the level should be above the "FULL COLD" mark on the recovery tank.

If the coolant level is low, remove the cap on the coolant recovery tank. Add to the recovery tank enough of a 50/50 mixture of water and a good quality ethylene glycol antifreeze (meeting GM Specification 1825-M) to bring the level up to the proper mark. Put the cap back on the recovery tank.

CAUTION: Under some conditions the ethylene glycol in engine coolant is combustible. To help avoid being burned when adding coolant, do not spill it on the exhaust system or engine parts that may be hot. If there is any question, have this service performed by a qualified technician.

Certain conditions, such as air trapped in the system, may affect the coolant level in the radiator. You should check the coolant level in the radiator at the time you change the engine oil and when the engine is cold. Follow the steps under "Adding Coolant" for the correct way to remove the radiator cap and add coolant.

Vehicles equipped with low coolant warning system refer to service manual or contact your GM dealer for coolant fill procedure Improper fill procedure may cause low coolant warning indication

If you have to add coolant more than four times a year (either to the recovery tank or to the radiator) or if coolant is dirty or discolored see your dealer for a cooling system check

NOTICE If you use the proper quality antifreeze, there is no need to add extra inhibitors or additives which claim to improve the system They may be harmful to the proper operation of the system

ADDING COOLANT

Every vehicle has a radiator cap

CAUTION To help avoid being burned do not remove the radiator cap while the engine and radiator are still hot Scalding fluid and steam can be blown out under pressure if the cap is taken off too soon

1 With the engine cool remove the radiator cap
   - Turn the cap slowly to the left until it reaches a stop Do not press down while turning the cap
   - When any remaining pressure (indicated by a hissing sound) is relieved then press down on the cap and continue turning it to the left
2 Add a mixture of water and ethylene glycol antifreeze meeting GM Specification 1825M, to provide the required cooling freezing and corrosion protection Use a solution that is at least 44 percent antifreeze but no more than 70 percent antifreeze Fill the radiator to the base of the filler neck and fill the coolant recovery tank until the level is slightly above the FULL COLD mark Put the recovery tank cap back on
3 Run the engine with the radiator cap removed until the upper radiator hose is hot With the engine idling add coolant to the radiator until it reaches the bottom of the filler neck Install the radiator cap making sure the arrows on the cap line up with the overflow tube on the radiator filler neck

It Is The Owner s Responsibility To

- Maintaining cooling system freeze protection at -29°C (20°F), or -37°C (34°F) in Canada or with RPO Z49 to ensure protection against corrosion and loss of coolant from boiling A 56/44 mixture of water and ethylene glycol antifreeze will provide freeze protection to -29°C (20°F) A 50/50 mixture will provide freeze protection to -37°C (34°F) You should do this even if you don t expect freezing temperatures Periodic replacement of coolant is needed to replace the

- a corrosion additives that wear out with use and that has become dark in color shows that it needs to be changed. This should
- Use only a 50/50 ethylene glycol base antifreeze that meets GM Specification 1825-M

NOTICE Do not use methanol-base antifreeze or alcohol or plain water alone in your vehicle at any time. They will boil at a lower point than that at which the TEMP light (or temperature gage) will warn of overheating. Also they do not provide proper protection against corrosion or adequate freeze protection.

DEAERATION TANK PRESSURE CAP

RADIATOR PRESSURE CAP

THERMOSTAT

SINGLE BELT ACCESSORY DRIVE

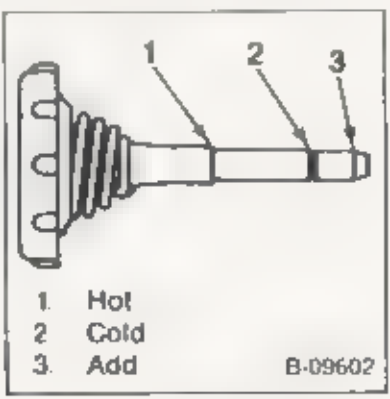
serpentine belt must be equivalent to vehicle original equipment serpentine belt. Refer to the Accessory Drive Belt Routing label. The following illustration shows a single belt accessory drive.

POWER STEERING SYSTEM

Check the fluid level in the optional power steering pump as recommended in the Maintenance Schedule booklet. Add GM Power Steering Fluid (GM Part Number 1050017 or equivalent) as needed.

- If the fluid is warmed up (about 66°C or 150°F, hot to the touch), the fluid level should be between the "HOT" and "COLD" marks on the filler cap indicator.
- If cool (about 21°C or 70°F), the fluid level should be between the "ADD" and "COLD" marks.

This fluid does not need periodic changing.



FRONT SUSPENSION AND STEERING LINKAGE

Specification 6031M

NOTICE: Ball joints should not be lubricated unless their temperature is 12°C (10°F) or higher. During cold weather, they should be allowed to warm up as necessary before being lubricated or damage to the ball joint could occur.

FRONT WHEEL BEARINGS

Schedule.

NOTICE: Long fiber or viscous type lubricant should not be used. Do not mix wheel bearing lubricants. Be sure to thoroughly clean bearings and hubs of all old lubricant before repacking.

Tapered roller bearings used in this vehicle have a slightly loose feel when properly adjusted. They must never be over tightened (preloaded) or severe bearing damage may result. Consult your GM dealer or service manual for proper detailed adjustment procedures and specifications.

REAR AXLE, ALL

Refer to the Maintenance Schedule booklet to find out the lubricant change interval. At this time, the fluid level should be checked and when the lubricant should be drained and refilled.

Add lubricant (as needed) to fill to the level of the fill plug hole on the [illegible] of the differential case. Use SAE 80W-90 GL-5 gear lubricant (GM Part No. 1052271). For those vehicles driven in Canada, use SAE 80W GL-5 gear lubricant.

FREEDOM BATTERY

WORKING NEAR BATTERY

CAUTION Follow the precautions listed in the "Jump Starting Caution (refer to the In Case of Emergency" section of this manual) when working on or near the battery. Personal injury (particularly to eyes) or property damage may result from battery explosion, battery acid, or electrical (short circuit) burns.

Your new vehicle has a Delco FREEDOM battery (two FREEDOM batteries with an optional diesel engine). It needs no periodic maintenance. Its top is permanently sealed (except for two small vent holes) and has no filler caps. You will never have to add water.

The hydrometer (test indicator) in the top of the battery provides information for testing purposes only.

If the vehicle is not going to be driven for 30 days or longer, disconnect the cable from the (black) negative termina of the battery to prevent discharge.

For lu power needs at replacement time, a Delco battery with the same catalog number as shown on the original battery s label is recommended.

AIR CONDITIONING

Periodically have your dealer check your air conditioning system to be sure there has been no loss in cooling output. See your dealer m nediately if you suspect it is not performing as it should.

Your vehicle's air condition ng system wi not operate below ambient temperatures of approximately 4°C (40°F) regardless of control position.

ACCELERATOR LINKAGE

Lubricate all pivot points with engine off at the interva shown in the Ma nienance Schedule. Do not lubricate the accelerator cable or cru se control cable (if so equipped).

HOOD LATCHES AND HOOD HINGE

Refer to the Maintenance Schedule booklet to find out how to lubricate hood latch and hood hinge assembly.

BRAKE MASTER CYLINDER

Check master cylinder fluid level n both reservoirs at the interva shown in the Maintenance Schedule. If the fluid is low in the reservoir, it should be filled to a point about 6 mm (¼ inch) below lowest edge of each filler open ng with Delco Supreme No. 11 or DOT-3 fluids.

HYDRO-BOOST BRAKE SYSTEM

HYDRAULIC PUMP

A. Vehicles Equipped With Power Steering
   - On vehicles equipped with power steering the power steering pump is also used as the Hydro-boost pump. Refer to the section on Power Steering System when checking fluid level or adding fluid.

B. Vehicles Equipped With Manual Steering
   - The Hydro-boost pump installed in vehicles equipped with manual steering uses power steering fluid. Refer to the section on Power Steering System when checking fluid level or adding fluid.

NOTICE: Power steering fluid and brake fluid cannot be mixed since seal damage may result.

BRAKE MAINTENANCE

GM replacement brake lining material is recommended for this vehicle to maintain the balance between front and rear brake performance. GM replacement brake parts have been carefully selected to provide the proper brake balance for purposes of both stopping distance and controllability over the full range of operating conditions. Installation of front or rear brake lining material with performance different from that of the GM replacement parts recommended for this vehicle can change the intended brake balance of this vehicle.

PROPELLER SHAFT SLIP JOINT

The propeller shaft slip joint should be lubricated at the interval shown in the Maintenance Schedule with water resistant extreme pressure (E.P.) chassis lubricant which meets General Motors Specification GM 6031M.

BODY LUBRICATION

Normal use of a vehicle causes metal-to-metal movement at certain points in the cab or body. Noise, wear and improper operation at these points will result when a protective film of lubricant is not provided.

For exposed surfaces such as door checks, door lock parts, lock striker plates, dovetail, bumper wedges, etc., apply a thin film of light engine oil.

Where oil holes are provided in body parts a dripless oil can be safely used, but any lubricant should be used sparingly and after application all excess lubricant should be carefully wiped off.

The seat adjusters and seat track should be lubricated with water resistant extreme pressure (E.P.) chassis lubricant.

There are other points on bodies which may occasionally require lubrication and which are difficult to service. Window regulators and

with a rubber lubricant.

LOCK CYLINDER LUBRICATION

dealer of this type.

TIRES

CAUTION: To reduce the risk of loss of vehicle control and personal injury:

- **Tires must be properly inflated and your vehicle must not be overloaded (refer to the information on "Inflation Pressure" in this section and "Important Information On Vehicle Loading" in the Introduction Section of this manual).**

these tires.

INFLATION PRESSURE

damage or failure and can result in tire overloading, abnormal tire wear, adverse vehicle handling, and reduced fuel economy. Air pressure that is too high can result in abnormal wear, harsh ride, and can increase the chance of damage from road hazards.

Check tire inflation pressures at least monthly and whenever your vehicle is serviced (including the spare, if so equipped). When possible, check tire inflation pressures when tires are "cold."

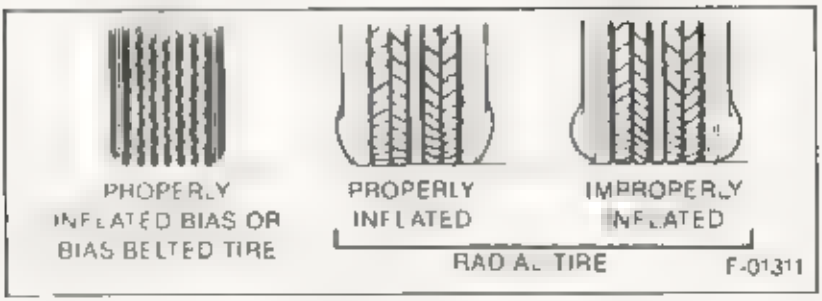
- The "cold" tire inflation pressure is the tire pressure when a vehicle has not been driven more than one mile (1.6 kilometers) after setting for three hours or more. This is the most accurate reading.
- It is normal for tire pressures to increase 30 to 60 kilopascals (4 to 8 pounds per square inch) or more when the tires are hot from driving. If you must set inflation pressures when the tires are not "cold," add 28 kilopascals (4 pounds per square inch) to the cold inflation pressures recommended for the load you are carrying.
- **Light Truck-Type" Tires.**

  For sustained driving at speeds of 65 mph to 74 mph (100 km/h to 120 km/h), where such speeds are allowed by law, cold inflation pressures must be increased 70 kPa (10 psi) above the recommended pressures for the load being carried. Do not exceed the wheel's maximum inflation pressure shown on the Wheel, Code and Load Limits Chart at the end of this section. Sustained speeds from 65 mph to 74 mph are not permitted when the 70 kPa (10 psi) increase would exceed the wheel's maximum inflation pressure. For sustained driving at speeds of 75 mph to 85 mph (120 km/h to 140 km/h), where such speeds are allowed by law, reduce axle load capacity by 10% in addition to the steps listed above. For speeds faster than 85 mph (140 km/h), follow the Caution at the beginning of this "Tires" section.

  A 70 kPa (10 psi) increase should also be used for special operating conditions, such as carrying slide-in campers. The total increase in inflation pressures, however, must not be more than 70 kPa (10 psi) or exceed the wheel's maximum inflation pressure limit.

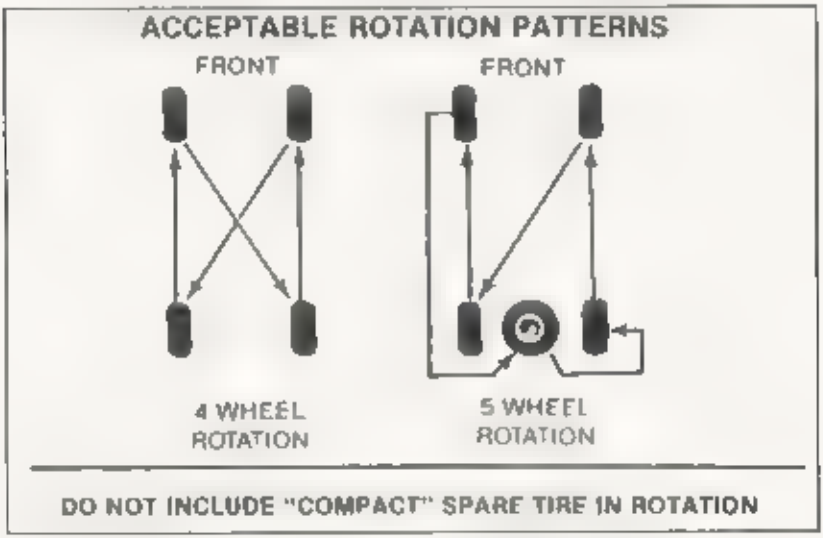
  "Light-truck type tires have "LT" molded into the sidewall near the size designation (example: 7.50-16LT or LT235/75R16) and/or are larger than 15 inches in wheel size.

- For proper inflation pressures when towing trailers, refer to "Trailer Towing" in Section 2.
- Always use a tire pressure gage when checking inflation pressures. We suggest you purchase a quality pocket-type tire pressure gage to check inflation pressures. Simply looking at the tires to check inflation pressures is not enough, especially with radial tires. Under-inflated radial tires may look like correctly inflated radial tires. If the inflation pressure on a tire is often low, have your dealer correct the cause.



- Be sure to put the tire inflation valve caps or extensions back on if so equipped. This will help keep dirt and moisture from getting into the valve core which could cause a leak.
- If an air loss occurs while driving, do not drive on the flat tire more than is needed to stop safely. Driving even a short distance on a flat tire can damage a tire and wheel beyond repair.

INSPECTION AND ROTATION



Front and rear tires perform different jobs and can wear differently depending on the types of roads driven, your driving habits, etc. For longer tire life, you should inspect and rotate your tires at the mileage intervals shown in the Maintenance Schedule. If your truck has tires with different load ratings between the front and rear, the tires should not be rotated front to rear, vehicle handling could be adversely affected and the tires having the lower load rating could be overloaded. (Refer to "Important Information on Vehicle Loading" at the beginning of this manual.)

For the longer tire life, any time uneven wear is seen, have the tires checked and rotated by your truck or tire dealer and have the cause of the uneven wear corrected. After rotation, adjust the front and rear tire pressures (refer to the label on the rear of the driver's door or, if applicable, the Tire Inflation charts), and be sure to check wheel nut tightness. Refer to "In Case of Emergency," Section 3 of this manual, for further information.

CAUTION: Whenever a wheel is changed, always remove any corrosion and dirt buildup from the inside of the wheel and the wheel mounting surface on the vehicle. It may be necessary to use a scraper as well as a wire brush.

Installing wheels without good metal to metal contact at the mounting surfaces can cause the wheel nuts to loosen, which can later allow a wheel to come off while the vehicle is moving, possibly causing loss of control.

DUAL TIRE OPERATION

CAUTION: Be sure to keep tires (including the spare) properly inflated. A tire that is run while seriously underinflated will overheat to the point where the tire may lose air suddenly and/or catch fire, possibly resulting in personal injury and/or property damage.

The [illegible] of a pair of dual wheels in [illegible] positions [illegible] to equalize wear and get better tire life.

[illegible] when [illegible] driven [illegible] high crown loads, an [illegible] pressure [illegible] 5 psi [illegible] in the outside tire [illegible] the best tire life. [illegible] not to exceed the inflation pressure [illegible] on the vehicle [illegible] label. When no longer [illegible] high crown loads, decrease air pressure to [illegible] recommended inflation pressure.

ALIGNMENT AND BALANCE

Proper wheel alignment improves tire tread life. Your vehicle's suspension parts should be inspected often and aligned when needed. (See the Maintenance Schedule booklet for more information.) Improper alignment will not cause the vehicle to vibrate. However, improper toe alignment will cause the front tires to roll at an angle which will result in faster tire wear. Incorrect caster or camber alignment will cause your front tires to wear unevenly and can cause the vehicle to "pull" to the left or right.

Proper tire balancing provides the best riding comfort and helps reduce tire tread wear. Out-of-balance tires can cause annoying vibration and uneven tire wear such as cupping and flat spots.

TRACTION

Driving, cornering, and braking traction are reduced when water, snow, ice, gravel, or other materials on the road. Adjust driving practices and vehicle speed to the road conditions.

When driving on wet or slushy roads, a wedge of water can build up between the tire and the road. This is known as hydroplaning and may cause partial or complete loss of traction, vehicle control, and stopping ability. To reduce the chance of traction loss, follow these tips:

- Slow down during rainstorms or when roads are slushy.
- Slow down if the road has standing water or puddles.
- Replace the tires when the tread wear indicators are showing.
- Keep the tires properly inflated.

If your vehicle has TPC all season (M & S) radial tires (refer to Tire Replacement in this section), your tires were designed to provide better snow traction. In fact, these tires should be adequate for driving in most winter conditions. However, if you buy conventional snow tires, be sure they are the same size, load range, and construction type (bias, bias-belted, or radial) as your other tires.

TIRE CHAINS AND SIMILAR TRACTION DEVICES

If you buy tire chains, make sure that they are SAE Class "S" or SAE Class "U" type chains. Use of other type chains may cause damage to your vehicle.

Use of chains may adversely affect your vehicle's handling. When using chains, adjust speed to road conditions, avoid sharp turns and avoid lock-wheel braking.

In addition, to prevent chain damage to your vehicle:

- Install the chains as tightly as possible, and then tighten them again after driving 1/4 to 1/2 mile (0.4 to 0.8 kilometer). However, if the chains can be heard contacting the vehicle, retighten immediately. If this is not done, damage to the vehicle may result.
- Do not exceed 45 mph (70 km/h), or the chain manufacturer's speed limitation, if lower.
- Drive in a restrained manner and avoid large bumps, potholes, severe turns, and other maneuvers which could cause the tires to bounce up and down.
- Follow any additional instructions of the chain manufacturer.

TIRE REPLACEMENT

CAUTION: Do not mix different tire construction types (such as radial, bias, and bias-belted tires) on your vehicle except in emergencies, because vehicle handling could be affected and may result in loss of control.

Some light truck-type and most passenger-car-type radial tires have a TPC Spec. No. (Tire Performance Criteria Specification Number) molded into the tire sidewall near the tire size marking. This shows that the tire meets rigid size and performance standards which were developed for your

vehicle. The TPC Spec. No. assures a proper combination of endurance, [illegible] capacity, handling, and traction on wet, dry, and snow covered surfaces. When you replace your tires with tires having the same TPC Spec. No., your new tires will be compatible with your vehicle. If you intend to replace your tires with an all season tread design, make sure the TPC Spec. Number has a "MS" (Mud and Snow) following the number.

When [illegible] tires with those not having a TPC Spec. No., you should use the same size, load range, speed rating, and construction type (bias, [illegible] or radial) as the original tires on your vehicle. Refer to the [illegible] on the rear of the driver's door.

Use of any other size or type [illegible] may affect such things as load carrying capacity, [illegible] handling, [illegible] speed capacity, speedometer [illegible] [illegible]

same axle with the least worn tire.

UNIFORM TIRE QUALITY GRADING

[illegible] developed by the National [illegible] Safety Administration [illegible] grades [illegible] treadwear, traction and temperature performance.

TREADWEAR

[illegible]

TRACTION — A, B, C

[illegible]

traction.

TEMPERATURE — A, B, C

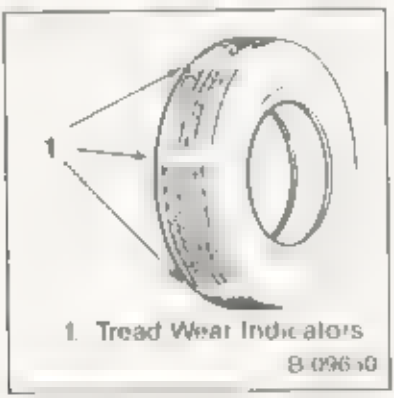
[illegible] A [illegible] B and [illegible] [illegible] heat [illegible] rated load [illegible] [illegible] temperature [illegible] the material of the tire [illegible] temperature [illegible] [illegible] The grade [illegible] level of performance [illegible] under the Federal Motor Vehicle Safety [illegible] B and A represent higher levels of performance [illegible] than the minimum required by law.

Warning The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

These grades are molded on the sidewalls of passenger car tires. While the tires available as standard or optional equipment on General Motors vehicles may vary with respect to these grades, all such tires meet General Motors performance standards and have been approved for use on General Motors vehicles. All passenger-car type tires must conform to Federal safety requirements in addition to these grades.

You should replace your tires when:

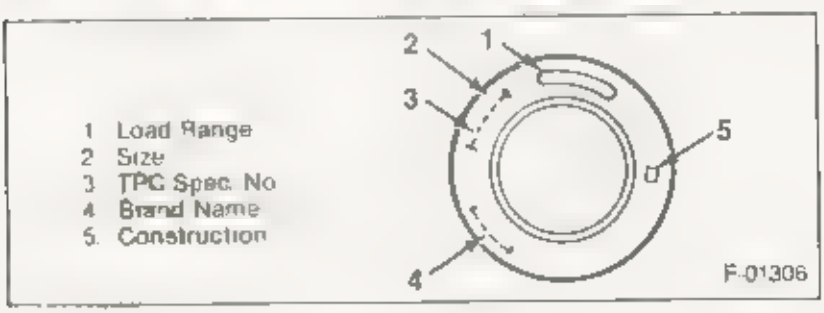
- They are worn to a point where 1.6 millimeters (2/32 inch) or less tread remains, or the cord or fabric is showing. To help you detect this, your tires have built-in tread wear indicators that appear between the tread grooves when the tread depth is 1.6 millimeters (2/32 inch) or less. When the indicators appear in two or more adjacent grooves at three spots around the tire, the tire should be replaced.



1. Tread Wear Indicators

8-096-90

- The tire tread or sidewall is cracked, cut, or snagged deep enough to expose the cord or fabric.
- The tire has a bump, bulge or split.
- The tire has a puncture, cut, or other damage that can not be correctly repaired because of the size or location of the damage.



WHEEL REPLACEMENT

Damaged wheels must be replaced. For example, replace wheels that are bent, cracked or heavily rusted or if wheel nuts often become loose. Also replace wheels that leak air (except some aluminum wheels which can be repaired — See your GM dealer). Refer to the Caution under "Inspection and Rotation" in this section regarding the importance of obtaining good metal-to-metal contact when replacing or changing wheels.

Do not use bent wheels which have been straightened, and do not use inner tubes in leaking wheels designed for tubeless tires. Such wheels may have structural damage and could fail without warning.

The wheel originally installed on your vehicle will provide optimum life up to the maximum load and inflation pressures shown in the Wheel Code and Limits Chart. Maximum loads, maximum inflation pressures, wheel identification codes, and wheel sizes are stamped on each wheel. Approved wheels are available from your dealer. When obtaining wheels from any other source, the replacement wheels should be equal in load capacity, inflation pressure capacity, diameter, width, offset, and mounting configurations to those originally installed on your vehicle.

A wheel of the wrong size or type may adversely affect such things as load carrying capacity, wheel and bearing life, brake cooling, speedometer/odometer calibration, stopping ability, headlight aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis. Replacement with used wheels is not advised. They may have been treated harshly or have very high mileage, and they could fail without warning.

The use of wheels and/or tires with higher load carrying capacities than originally equipped on your vehicle does not increase the GAWR or the GVWR of the vehicle.

You can get replacement wheels from your GM dealer.

WARRANTY

Tires are warranted by the tire manufacturer. Warranty information is included in the manufacturer's warranty folder furnished with your vehicle.

WHEEL CODE AND LIMITS

Code*	Wheel Size	Max. Load kg (lbs.)	Max. Pressure kPa (psi)
DAS	15 x 6.5	835 (1,843)	282 (41)
RBE	15 x 6.5	835 (1,843)	282 (41)
XAH	15 x 6	900 (1,984)	483 (70)
XH	15 x 6	719 (1,585)	276 (40)
YH	16.5 x 6	1,216 (2,680)	586 (85)
YJ	16.5 x 6.75	1,216 (2,680)	586 (85)

* Steel wheel code is located on the wheel just to the right of the valve stem hole. Aluminum wheel code is located on the wheel-to-axle mounting area.

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TIRE AND WHEEL LOAD LIMIT CHARTS

(Tire and wheel load limits are shown below. Vehicle loading must be limited so that neither the wheel or tire inflation pressure or load limits are exceeded)

Tire Load Limits: Bias Tires Used As Singles — kg (lbs)

Tire Size	Load Range	Inflation Pressure — kPa (PSI) 207 (30)	241 (35)	276 (40)	310 (45)	345 (50)
8.00-16.5LT	C	617 (1 360)	676 (1 490)	730 (1 610)	785 (1 730)	
8.00-16.5LT	D	617 (1 360)	676 (1 490)	730 (1 610)	785 (1 730)	835 (1 840)
8.75-16.5LT	D	712 (1 570)	780 (1 720)	839 (1 850)	903 (1 990)	957 (2 110)
8.75-16.5LT	E	712 (1 570)	780 (1 720)	839 (1 850)	903 (1 990)	957 (2 110)

Tire Load Limits: Bias Tires Used As Duals — kg (lbs)

Tire Size	Load Range	Inflation Pressure — kPa (PSI) 207 (30)	241 (35)	276 (40)	310 (45)	345 (50)
8.00-16.5LT		542 (1 195)	594 (1 310)	642 (1 415)	689 (1 520)	
8.00-16.5LT		542 (1 195)	594 (1 310)	642 (1 415)	689 (1 520)	734 (1 620)

Tire Load Limits: Radial Tires Used As Singles — kg (lbs)

Tire Size	Load Range	Inflation Pressure — kPa (PSI) 207 (30)	241 (35)	276 (40)	310 (45)	345 (50)
8.75R-16.5LT	C		712 (1 570)	780 (1 720)	839 (1 850)	903 (1 990)
8.75R-16.5LT	D		712 (1 570)	780 (1 720)	839 (1 850)	903 (1 990)
8.75R-16.5LT	E		712 (1 570)	780 (1 720)	839 (1 850)	903 (1 990)

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Tire Load Limits: Bias Tire Used As Singles — kg (lbs.) (Cont.)

Inflation Pressure — kPa (PSI)					
379 (55)	414 (60)	448 (65)	483 (70)	517 (75)	552 (80)
882 (1 945)	928 (2 045)				
1016 (2 240)	1066 (2 350)				
10 6 (2 240)	1066 (2 350)	1120 (2 470)	1166 (2 570)	1215 (2 680)	

Tire Load Limits: Bias Tires Used As Duals - kg (lbs.) (Cont.)

Inflation Pressure — kPa (PSI)					
379 (55)	414 (60)	448 (65)	483 (70)	517 (75)	[illegible]
776 (1 710)	816 (1 800)				

Tire Load Limits: Radial Tires Used As Singles — kg (lbs.) (Cont.)

Inflation Pressure — kPa (PSI)					
379 (55)	414 (60)	448 (65)	483 (70)	517 (75)	552 (80)
957 (2 110)	1016 (2 240)	1066 (2 350)			
957 (2 110)	1016 (2 240)	1066 (2 350)	1120 (2 470)	1166 (2 570)	1216 (2 680)

B-08313

For continuing satisfaction keep your vehicle all GM General Motors parts are identified by one of these trademarks

SECTION 6
SPECIFICATIONS

These specifications are given here for information only. Before using them, see the Cautions and other instructions throughout this manual — the index may help you locate such items. For more information, see the service manual covering the chassis or body part in question. Your GM dealer may also be able to help.

SERVICE PARTS IDENTIFICATION LABEL

The Service Parts Identification Label is provided on all vehicle models. It is located on the inside of the glove box door. The label lists the V.I.N. (vehicle identification number), wheelbase, paint color combination and all Production options or Special Equipment on the vehicle when it was shipped from the factory. Be sure to provide this information to your GM dealer when it is necessary to order parts.

REPLACEMENT PARTS

Replacement part numbers listed in this section are based on the latest information available at the time of printing, and are subject to change. If a part listed in this manual is not the same as the part used in your vehicle when it was built, or if you have any questions, please contact your GM dealer or parts supplier. Use a part that is equivalent to the one being replaced.

ABBREVIATIONS

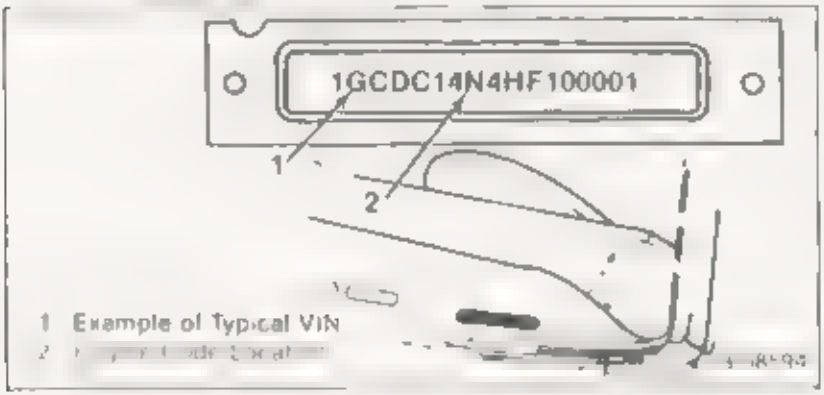
Some of the abbreviations used in this section are shown in the following chart.

Abbreviation	Explanation
CPC	Chevrolet - Pontiac - Canada Group
BOC	Buick - Oldsmobile - Cadillac Group
TBI	Throttle Body Injection
Carb.	Carbureted
L.D.	Light Duty
H.D.	Heavy Duty

IDENTIFICATION NUMBERS

VEHICLE IDENTIFICATION NUMBER (VIN)

This is the legal identifier for your vehicle. It appears on a plate attached to the left top of the instrument panel. This plate can be seen easily through the windshield from outside your vehicle; refer to illustration. The VIN also appears on the certificates of Title and Registration. Refer to Section 0 for more information on the Vehicle Identification Number.



1 Example of Typical VIN
2 [illegible]

ENGINE IDENTIFICATION

[illegible] identify your 1987 GM engine from the vehicle Identification Number. The eighth character of the VIN is the Engine Code. The Engine Code designations are listed below. Some [illegible] may have [illegible] Engine Code M) V8 engine.

ENGINE DESCRIPTION

Liter Displ	Type	VIN Engine Code	Fuel System	Produced By	Emissions
4.3 L	V6	Z	TBI	U.S.	L.D.
5.0 L	V8	H	TBI	U.S. Can.	H.D.
5.7 L	V8	K	TBI	U.S. Can.	L.D.
5.7	V8	M	Carb	U.S. Can.	H.D.
6.2 L	V8	[illegible]	Diesel	U.S.	L.D.
6.2 L	V8	J	Diesel	U.S.	H.D.
7.4 L	V8	N	TBI	U.S.	L.D.

SERVICE REPLACEMENT PARTS AND FILTER RECOMMENDATIONS

Engine (VIN)	Oil Filter	AIR Cleaner	PCV Valve	Radiator Cap	Spark* Plugs	Fuel Filter
4.3 L (Z)	PF51	A333C	CV789C	RC36	R43TS/ R43CTS/ CR43TS	GF481
5.0 L (H)	PF35	A348C	CV774C	RC36	R43TS/ R43CTS/ CR43TS	GF481
5.7 L (K)	PF35	A348C	CV774C	RC36	R43TS/ R43CTS/ CR43TS	GF48
5.7 L (M)	PF35	A178CW	CV774C	RC36	R44T	GF471
8.2 L (C)	PF35	A644C	N/A	RC32	N/A	TP1006
6.2 L (V)	PF35	A644C	N/A	RC32	N/A	TP1006
7.4 L (N)	PF35	A348C	CV774C	RC36	CR43TS/ R43TS/ R43C1S	GF481

Use copper cored resistor type spark plugs

N/A Not Applicable

WHEEL NUT TORQUE

Series	Bolt Dia	No of Bolts	Torque
G10/15/20/25	1/2"	5	140 N m (102 ft lbs.)
G30/35	9/16"	5	160 N m (117 ft lbs.)
G30/35	9/16"	8	190 N m (139 ft lbs.)

Refer to Sections 3 and 5 for complete wheel changing and tire information

CAPACITIES

Item	Metric Measure	US Measure
Cooling System (Approx.)		
4.3 L (Z)	10.5 L	11 Qts.
5.0 L (H), 5.7 L (K), 5.7 L (M)		
Without rear heater	16 L	17 Qts
With rear heater	18.7 L	20 Qts.
6.2 L (C)	23 L	24 Qts
6.2 L (J)	24.2 L	25.5 Qts
7.4 L (N)	22 L	23 Qts
Crankcase (Approx.)*		
All engines except diesel and 7.4 L (N)		
With filter	4.7 L	5 Qts
Without filter	3.8 L	4 Qts.
7.4 L (N)		
With filter	5.7 L	6 Qts
Without filter	4.7 L	5 Qts
Diesel engines with filter	6.5 L	7 Qts
Fuel Tank (Approx.)		
All engines		
Standard	83 L	22 Gal
Optional	125 L	33 Ga

*After refilling, fluid level must be checked as outlined under "Service and Maintenance" in Section 5

LAMP BULB DATA

AC Type Guide Lamps are recommended when replacement becomes necessary

Lamp Usage		Quantity	Trade #	Power Rating @ 12.8V Watts
Headlamps	Quad System	2 2	4652 H4651	60 40 50
	Dual System	2 2	6052 (Opt.) H6054 (Opt.)	55 65 35 65
				Candle Power
Dome Lamps		2	211-2	12
Oil Pressure Indicator Lamp		1	161	1
Generator Indicator Lamp[2]		1	194	2
Headlamp Beam Indicator Lamp		1	161	1
Park, Signal Lamp Assy.		2	2057NA	15.24†
Tail, Stop Lamps		2	2057	2.32†
License Lamp		1	67	4
Temperature Indicator Lamp		1	194	2
Directional Indicator		2	194	2
Marker Lamps		4	194	2
Brake Warning Indicator Lamp		1	194	2
Back-up Lamp		2	1156	32
Radio Dial Lamp		1	1893	2
Heater or A/C Control		1	194	2
Transmission Indicator Dial With Tilt Wheel and Auto. Trans.		1	1445	0.7
Transmission Indicator Dial		1	73	0.3
Choke Heater Indicator		1	194	2
Stripwell Lamp		2	212-2	6
Reading Lamp		2	906	6
Seat Belt Warning		1	194	2
Glow Plugs Lamp (Diesel)		1	194	2
Water In Fuel Lamp (Diesel)		1	194	2
Low Coolant Lamp (Diesel)		1	194	2
Service Engine Soon Indicator		1	194	2
Instrument Cluster Illum.		3	168	3
Instrument Cluster Illum.		1	161	1
Instrument Cluster Illum.		1	194	2
Instrument Cluster Illum.		6	194	2

† With gages only
2 With indicator light cluster only
† Double filament bulb

FUSES AND CIRCUIT BREAKERS

Name	Circuits Protected	Fuse	Circuit Breaker
[illegible]	[illegible] Lamps	5 Amp	
	Radio Dial Lamp Heater Lamp		
	Audio Alarm		
Pwr Acc	Power Door Locks		30 Amp
[illegible]	[illegible] Delay Theft Deterrent	20 Amp	
	Cigarette Lighter Dome Lamps		
[illegible]	Audio Alarm [illegible]	20 Amp	
	Gages Brake Switch Cruise Control		
Aux Htr A/C	Auxiliary Heater and Air Conditioning	25 Amp	
[illegible]	Stop Hazard Flasher Audio Alarm	20 Amp	
Tail Lps	Tail Lamps	20 Amp	
[illegible]	[illegible] and Backup Lamps	20 Amp	
Htr A/C	Heater and Air Conditioning	20 Amp	
Radio	Radio	10 Amp	
ECM B	Electronic Control Module	10 Amp	
ECM I	Electronic Control Module	10 Amp	
Pwr Wndo	Power Window		30 Amp
Wiper	Windshield Wiper	25 Amp	
Choke*	Oil Pressure Switch	20 Amp	
[illegible]	[illegible]	20 Amp	
Trailer**	Trailer Wiring Harness	30 Amp	

*For 5.7 L Carbureted Engine Only

**For TBI Engines

In line fuse. Refer to Trailer Wiring Harness

FUSES—CIRCUIT BREAKERS

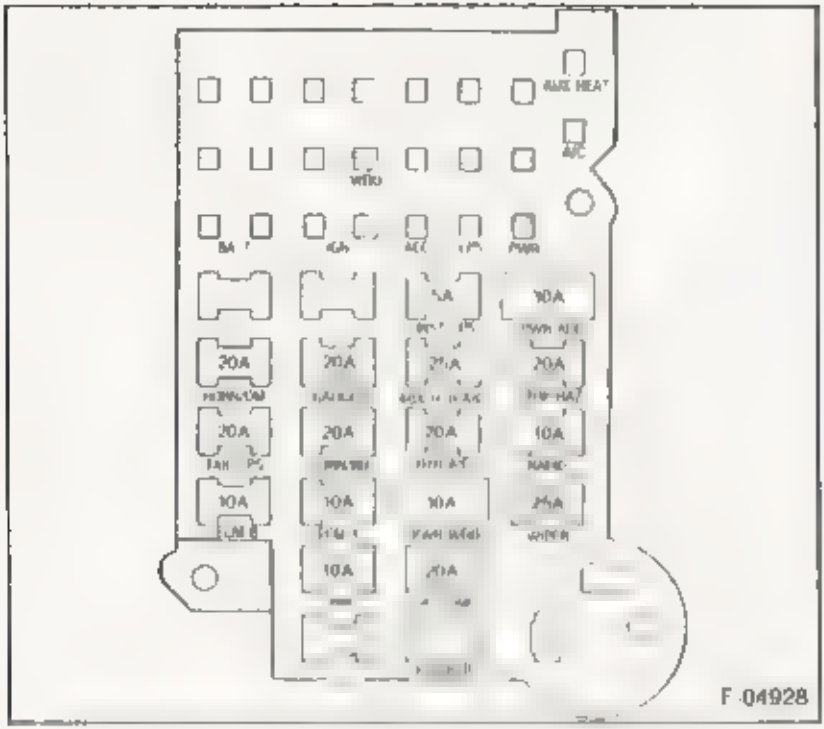
Electrical components are protected from [illegible] by a combination of fuses, circuit breakers and [illegible] in the wiring. This greatly reduces the hazard of [illegible] and damage to the vehicle.

The headlight wiring is protected by a circuit breaker in the light switch. An electrical overload will cause the lights to go on and off, or in some cases to remain off. If this happens, have your headlight wiring checked right away.

The windshield wiper motor is protected by a circuit breaker in addition to a fuse. If the motor overheats due to overloading caused by heavy snow or ice, the wiper will remain stopped until the motor cools. Be sure to have the cause of the overloading corrected.

Trailer Wiring Harness

The optional trailer wiring harness is protected by an in line fuse in the battery feed wire. This fuse is located near the junction block.



ADD ON" ELECTRICAL EQUIPMENT

The electrical system in your vehicle is designed to perform under expected operating conditions without interference between components. Before any electrical equipment is installed after you purchase your vehicle, please consult your dealer. Certain electrical equipment or the way in which it is installed may adversely affect vehicle operation, such as the performance of the engine, driver information, entertainment and electrical charging systems. GM assumes no responsibility for any expense which you may incur or for any adverse effect upon your vehicle or any of its components or systems which may result from the installation of additional electrical equipment which is not supplied or recommended for installation by GM.

The Fuse Panel is located beneath the instrument panel on the driver's side.

Do not use fuses of higher amperage rating than those recommended above.

The following wiring harnesses are protected by a "fusible link" which is a special wire incorporated in the circuit: ignition, and headlamp hi-beam indicator circuits. Should an electrical overload occur, this wire will fail and prevent damage to the major harness.

UPDATED SERVICE INFORMATION YOU CAN OBTAIN*

*Information on how to obtain Product Service Publications Subscriptions Indexes and Summaries as described below is applicable only in the fifty states (and the District of Columbia) and only for cars and light trucks with GVWR less than 10,000 pounds

In Canada information pertaining to Product Service Bulletins and Indexes can be obtained by writing to Service Publications Department Oshawa, Ontario L1J 5Z6

Chevrolet regularly sends its dealers useful service bulletins about Chevrolet products Chevrolet monitors product performance in the field We then prepare bulletins for servicing our products better Now you can get these bulletins, too

Bulletins cover various subjects Some pertain to the proper use and care of your vehicle Some describe costly repairs Others describe inexpensive repairs which if done timely with the latest parts, may avoid future costly repairs Some bulletins tell a mechanic how to repair a new or unexpected condition Others describe a quicker way to fix your vehicle They can help a mechanic service your vehicle better

Most bulletins apply to conditions affecting a small number of vehicles. Your Chevrolet dealer or a qualified mechanic may have to determine if a specific bulletin applies to your vehicle

You can subscribe to all Chevrolet bulletins This way you'll get them as they come out You can wait a while and get an index to the bulletins The index summarizes some of the more important bulletins You can also get individual bulletins However you need the index to identify them

SUBSCRIPTIONS

You can subscribe to all Chevrolet Product Service Publications (PSP's) This will include bulletins for all of the vehicles sold by Chevrolet and will not be limited to the PSP's applicable to any particular model When you buy a subscription you will receive the PSP's as possible mailings shortly after they come out A subscription costs $75.00 and entitles you to all the PSP's published by Chevrolet during the model year You can purchase a subscription by sending a check or money order to HELM PO Box 07130. Detroit Michigan 48207 along with the order form You may get additional subscription ordering forms by calling the toll-free number listed on the following page, or you can find them at participating dealerships

INDIVIDUAL PSP'S

If you don't want to buy all the PSP's issued by Chevrolet for all vehicle models in the model year you can buy individual PSP's, such as those which may pertain to a particular model To do this, you will first need to see our index of PSP's It provides a variety of information Here's what you find in the index and how you can get one

What you'll find in the index:

- A list of all PSPs published by Chevrolet in a model year (1985 or later) PSPs covering all models of Chevrolet vehicles are listed in the same index
- Ordering information so you can buy the specific PSPs you may want
- Price information for the PSPs you may want to buy
- Easy-to-understand summaries of some of the more important PSP's. These summaries highlight some of the PSPs which describe costly repairs or which are designed to prevent costly repairs or which contain owner use and care information

How you can get an index.

Indexes are published quarterly each model year and each quarterly issue is updated cumulatively for that model year. Most of the PSPs which could potentially apply to the most recent Chevrolet models will be listed in the last quarterly publication for that model year. Therefore, you may want to wait until the end of the model year before ordering an index. If you are interested in buying PSPs pertaining to a current model year vehicle.

Some PSPs pertaining to a particular model year vehicle may be published in later years and these would be listed in later year's index. When you order an index for a model year that is not over yet, we'll send you the most recently published quarterly issue. You can specify an index for an earlier model year, but not before 1985.

Cut out the ordering form, fill it out and mail it in. We will then see to it that an index is mailed to you. There is no charge for indexes for the 1985-1988 model years.

TOLL-FREE TELEPHONE NUMBERS

If you want an additional ordering form for an index or a subscription just call toll free and we'll be happy to send you one. Automated recording equipment will take your name and mailing address. The number to call is 1-800-551-4123.

COPIES AT PARTICIPATING DEALERS

Copies of the indexes and individual PSPs are at your participating Chevrolet dealer. You can ask to see them.

A Very Important Reminder. These PSPs are meant for mechanics. They are not meant for the "do it yourselfer". Mechanics have the equipment, tools, safety instructions, and know how to do a job quickly and safely.

For continuing satisfaction keep your vehicle all GM General Motors parts are identified by one of these trademarks

SECTION 7
SERVICE STATION INFORMATION

Refer to "Service and Maintenance," Section 5 for further details.

ENGINE COVER REMOVAL

Your Van can be serviced much the same as conventional passenger cars by raising the hood of the vehicle to check the radiator, battery, engine oil, drive belts, automatic transmission fluid level, windshield washer reservoir, etc.

1 Hood Support
2 Folded Position

B-09778

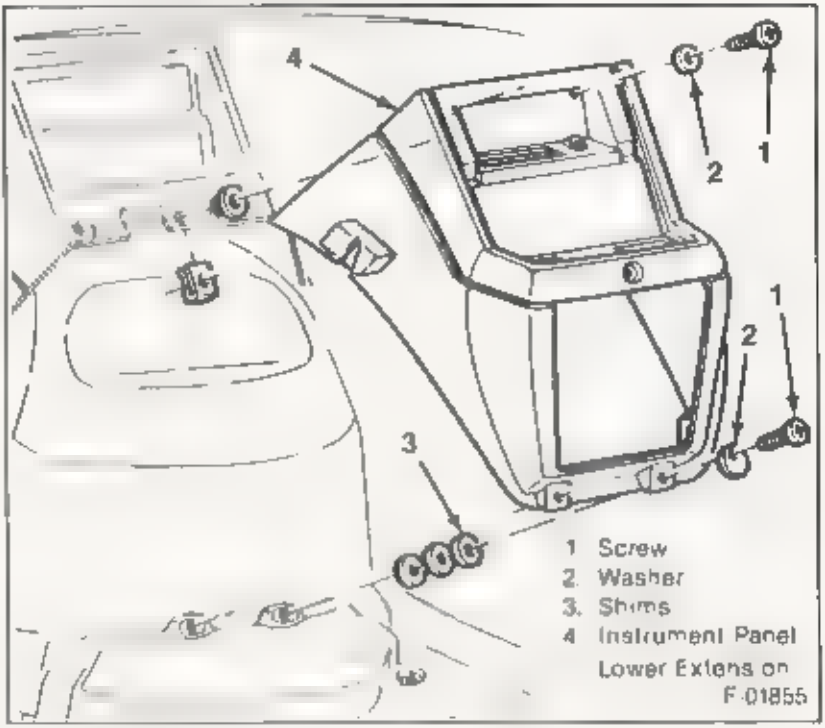
Servicing the air cleaner or distributor requires removal of the engine cover inside of the vehicle.

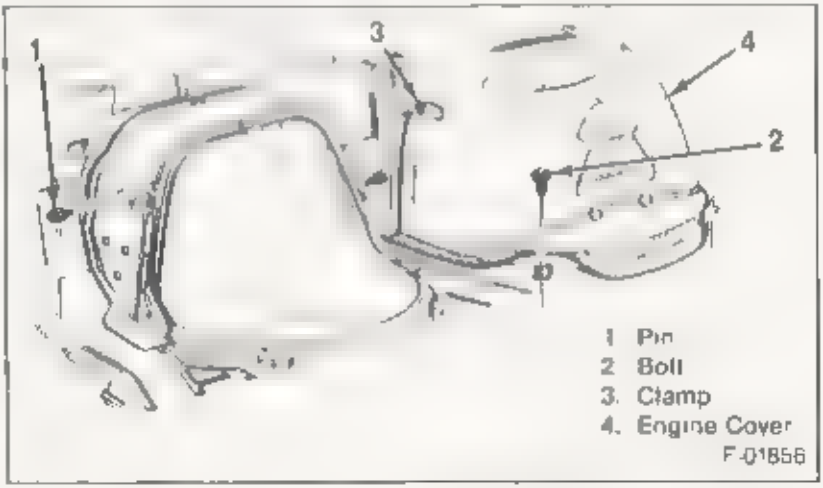
To remove the engine cover:

1. Remove the instrument panel lower extension screws, washers and shims.
2. Remove the instrument panel lower extension and disconnect the ashtray and lighter wiring.
3. Remove the two bolts which connect the engine cover to the floor.
4. Remove the clamps (on the sides of the engine compartment) from the pins.
5. Remove the engine cover.

To replace the engine cover:

1. Install the engine cover.
2. Connect the clamps to the pins.





3. Install the floor panel bolts
4. Put the instrument panel lower extension in place and install the screws washers and shims

FUEL CAP

Located on the left rear quarter panel

To remove the fuel cap, refer to fuel cap removal procedure in "Service and Maintenance," Section 5 of this manual

FUEL REQUIREMENTS (GASOLINE ENGINES)

Light Duty Emission Class vehicles use unleaded gasoline. Refer to "Fuel Requirements (Gasoline Engines)" in "Starting and Operating," Section 2 of this manual.

Heavy Duty Emission Class vehicles are certified to meet all applicable emission requirements on regular grade leaded or unleaded gasoline. Refer to "Fuel Requirements" in "Starting and Operating," Section 2.

FUEL REQUIREMENTS (DIESEL ENGINES)

Use only Number 2-D or Number 1-D diesel fuel. If you expect temperatures above -7°C (20°F), use Number 2-D. If you expect temperatures below -7°C (20°F), use a "winterized" blend of Number 2-D, or use Number 1-D. (Refer to "Diesel Fuel Requirements and Fuel System" in Section 2.)

STEPS IN REFUELING

CAUTION: Before pulling up to a fuel pump, be sure that all occupants in your vehicle stop smoking and extinguish any smoking materials. Do not permit spark or flames in the presence of gasoline or diesel fuel, to help avoid personal injury or property damage due to fire. Gasoline will ignite and burn rapidly if fuel is free to vaporize in the "right" proportions at a source of ignition. These proportions usually occur a short distance from liquid fuel such as at a filler pipe outlet. Diesel fuel will ignite and burn readily as gasoline if the fuel is warm enough or additives have lowered its ignition temperature.

1. Follow all the steps under "Parking" in Section 2.
2. Select the correct fuel as referenced above. Follow any posted safety rules. Stand to the side, never above or opposite the filler opening.
3. Check that the fuel cap is tight and see to it that engine oil, coolant in the reservoir and washer fluid, etc., are at proper levels. Then do the Driver Daily Checklist in Section 1.

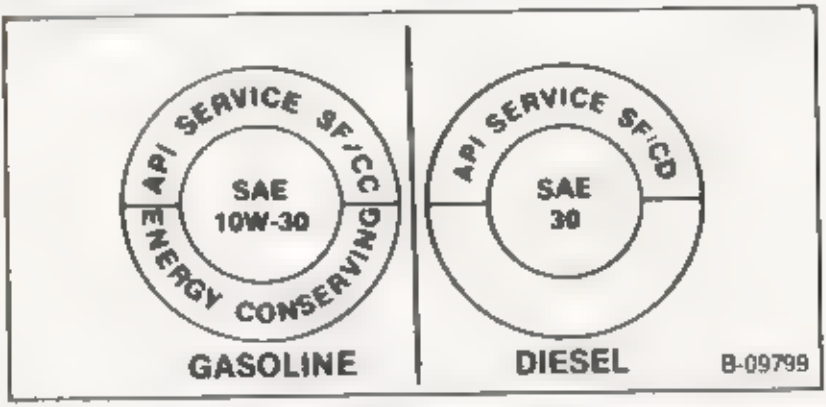
HOOD RELEASE

The hood release handle is on the right side of the instrument panel. To open, pull the handle to release the hood latch. Then, push down slightly on the hood while lifting the underhood lever. Raise the hood and hold it open with the hood prop on the top of the radiator support. To lower, lift the hood slightly to remove tension from the hood prop. Then, place the hood prop in its retaining clip and lower the hood.

ENGINE OIL

If the outside temperature is expected to be above 0°F (-18°C) prior to the next oil change, an SF/CC quality, SAE 10W-30, Energy-Conserving oil is

the preferred engine oil for your vehicle. However, to improve cold-starting performance, an SF/CC quality, SAE 5W-30, energy conserving oil may be used if the outside temperature does not exceed 60°F (16°C), and should be used if the temperature is below 0°F (-18°C). For diesel engines use SF/CD or SF/CC quality, SAE 30 engine oil if the outside temperature is expected to be above 32°F (0°C) prior to the next oil change.



For other expected outside temperatures and additional important information on engine oil refer to "Engine Oil and Filter Recommendations" in Section 5 of this manual for the recommended viscosity grade. Add oil as needed to maintain the proper level within the operating range shown on the dipstick.

TIRE INFLATION PRESSURES

Check tire inflation pressures at least monthly (including the spare). Keep them inflated to the pressures shown on the Certification Label on the rear of the driver's door.

ENGINE COOLING SYSTEM

Check the fluid level in the coolant recovery tank at regular intervals, such as during a fuel stop. (Refer to "Engine Cooling System" in "Service and Maintenance" Section 5 of this manual.)

WINDSHIELD WASHER

Check the windshield washer reservoir fluid level regularly. Use a high quality premixed solvent available at most dealers or service stations, or GM Optikleen. Avoid hard water when mixing Optikleen or other windshield washer solvents. Hard water contaminates may plug orifices in washer system and reduce performance.

BATTERY

Your new vehicle has a Delco FREEDOM battery (two FREEDOM batteries with an optional diesel engine). You will never have to add water. The hydrometer (test indicator) in the cover provides information for testing purposes only.

INDEX

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N

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OPERATING RECORD

DATE	MILEAGE	FUEL		OIL		REPAIRS	
		$		$		$	

DATE	MILEAGE	FUEL		OIL		REPAIRS	
		$		$		$	

OPERATING RECORD

DATE	MILEAGE	FUEL		OIL		REPAIRS	
		$		$		$	

DATE	MILEAGE	FUEL		OIL		REPAIRS	
		$		$		$	

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